Vocational Continuity of College Women

A Study Based on Data Secured from 6466 Women Who Matriculated in Land-Grant Colleges Between 1889 and 1922

By

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Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Faculty of Philosophy
Columbia University
New York City
1932

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By the

Institute of Women's Professional Relations

Entered at Greensboro, North Carolina, as second class matter

March 15, 1922

Printed in the U. S. A.

ACKNOWLEDGMENTS

To all those who by their help and encouragement have aided me in making this study, I am deeply grateful.

I wish to thank in particular Dr. Ruth Strang of Teachers College, Columbia University, for her careful critical analysis of the material used and for her helpful guidance and warm interest throughout the progress of the study; and the other members of my dissertation committee at Teachers College, Dr. Harry D. Kitson and Professor Sarah Sturtevant, for their advice and criticism. I am greatly indebted also to my secretary, Miss Lois Hines, who gave unsparingly of time and energy to assisting with the preparation of the manuscript.

A special debt of gratitude is due Mrs. Chase Going Woodhouse, Director of the Institute of Women's Professional Relations, under whose general direction this study has been undertaken and who has made available for use the material on which the research is based. Her criticism, advice, and enthusiasm have made possible the completion of the study. I appreciate also the help given by various members of the staff of the Institute of Women's Professional Relations.

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Summary and Conclusions

This study is based on the reports of 6466 women, matriculants during 1889-1892, 1899-1902, 1909-1912 and 1919-1922 in 42 land-grant colleges and universities. The data were secured by means of questionnaires sent out by the United States Office of Education in connection with the survey of the land-grant institutions. Although the percentage of matriculants returning answers is not large enough to warrant sweeping application of the results, the fact that neither time of matriculation, geographical location nor marital status seemed to have biased the sample would indicate that the women reporting may well be typical of land-grant college and university women in general.

The main interest of this study is to present data pertaining to the vocational continuity shown by the 6466 women and to determine whether certain groups of these women showed consistently more vocational continuity than did other groups when measured by the criteria adopted—presence or absence of gainful employment, relation between present employment and the occupation originally selected, occupational stability, relation between training received in college and occupations followed.

In the absence of conclusive data bearing on the point it is not assumed that vocational continuity in any or all of its aspects is in general desirable or undesirable. What is desirable is more knowledge on the whole subject and an attempt is made, therefore, to isolate those elements in the personal, educational and vocational histories of the 6466 women which repeatedly show a positive relationship with vocational continuity.

Within the limits of the definition of vocational continuity and of the validity and reliability of the measures used, the following conclusions, applicable certainly to the group of land-grant college women studied and perhaps to all women of those institutions matriculating between 1889 and 1922, seem justified:

1. A large majority of these land-grant college women, 81.8 per cent, had at some time held remunerative positions.

2. The women of the later matriculation periods probably had greater vocational continuity than did the women of the earlier periods.

3. Married women showed distinctly less vocational continuity than did single women.

4. These land-grant college women showed a tendency toward persistence in the occupation originally selected, 65.1 per cent being engaged at the time of the survey in the occupation originally selected and an additional 17.2 per cent in one closely allied to it.

5. In the absence of comparable data it is impossible to say whether they were relatively stable or unstable in their vocational experiences. The findings on stability are repeated here somewhat in detail:

> (a) The mean number of years to a position was 2.72, and the median, 2.25, with a range from the first to the fourth matriculation period of 6.33 to 2.41 years for the mean and 4.93 to 2.01 years for the median.
>
> (b) Of the entire group 63.0 per cent averaged two years or more to a position. Of the fourth matriculation period group 28.3 per cent remained in one position for an average of three years or more, while 17.6 per cent of the matriculants of 1909-1912, 45.3 per cent of those of 1899-1902 and 51.4 per cent of those of 1889-1892 remained in one position for an average of five years or more.
>
> (c) Eighty and three tenths per cent of the women of the 1919-1922 group had remained in one occupation, and 87.1 per cent within one training field for their entire period of gainful employment. While only 2.0 per cent of the women of this group had changed their occupation twice, and 1.2 per cent had engaged in occupations involving three different training fields, 17.4 per cent had made one occupational change and 11.5 per cent had entered a new training field within the short time that they had been gainfully employed. The women of the 1909-1912 matriculation period, all of whom had been employed 10 years or longer, had 56.4 per cent of their number who had engaged in only one occupation, and 72.1 per cent who had remained within one training field. Thirty-one and nine tenths per cent of their number had made one change in occupation, and 23.0 per cent one change in train-

ing field, while a percentage so small as to be negligible had entered five different occupations, involving five different training fields.

(d) Both the percentages of women who remained in one occupation and the mean number of occupations engaged in indicate a certain amount of shifting during the second five years of employment. That the changes tend, however, to come during the first five years is shown by the fact that 86.9 per cent of the single women of the 1889-1902 group and 72.6 per cent of the single women of the 1909-1912 group made no changes during the second five years of employment. The percentages making no changes during the second five years are almost the same, regardless of the number of occupations engaged in during the first five years.

6. One third of the 1909-1912 and 1919-1922 groups of women had pursued major fields of study during their undergraduate college days which offered no training for their present occupations. Nineteen and four tenths per cent had not majored in either graduate or undergraduate courses which would have prepared them for the work in which they were engaged at the time of the survey.

7. Of those in the same groups who reported that they were engaged in the occupations they had originally selected, 80.0 per cent had received undergraduate preparation for that work, and only 9.5 per cent had not elected either graduate or undergraduate majors which would train them for their chosen work. On the other hand, of those who were doing work entirely different from that originally selected, only 47.1 per cent had had undergraduate majors which prepared for their present work, and 31.1 per cent had received no preparation for their present occupations through either graduate or undergraduate major college courses.

8. The women who took degrees had more continuous vocational histories than did those who did not take degrees. There is a slight indication also that the women who did not change either their major fields of undergraduate study or their colleges persisted in their original vocational interests to a greater extent than did those who made one or more changes in the course of their educational histories. There seems, in

other words, to be a positive relationship between continuity of educational interest and continuity of vocational persistence.

9. The women who engaged in the occupations chosen at the time of making definite vocational decisions were more likely to have made undergraduate or graduate preparation for their occupations than those who engaged in occupations other than the one originally selected.

10. The women who made their vocational decisions early, from the high school period upward, were more likely than those who chose their vocations later to stay a slightly longer average number of years in a position and to remain in one occupation and in one training field. From the standpoint of vocational continuity, the most favorable time for making a vocational decision seemingly was before entering college, or if later, at some time during the college years rather than after graduation.

11. The women who majored in language and literature made fewer changes in occupation, and those who majored in home economics, fewer changes in training fields than did the women who majored in other fields of undergraduate study. Those who majored in the social sciences, and, to a smaller extent, those who majored in natural science and in music and art, were much more likely to make changes both in occupations and in training fields than were those who majored in other subjects.

12. The women who were most likely to persist in their original vocational interests were the ones who selected an occupation before entering college, majored in a field of study which offered preparation for that occupation, remained within that field of study, and finally took their degrees in the colleges in which they first matriculated. The likelihood of continuity of vocational experience is increased for these women if they majored in language and literature or in home economics and did not marry.

13. The women who had tried more than one occupation and entered more than one training field had a greater proportion of their numbers in both the under $1,000 and the $2,000 and over present earning groups than did those who

had remained in the occupation or training field originally selected.

The main practical value of this study lies in the fact that, because of the large number of cases and their wide geographical and time distribution, the findings may be found useful as a basis for thinking about some of the problems now apparent in the field of vocational guidance of women.

Specifically, the findings are applicable to:

First, a consideration of the responsibility of land-grant colleges for vocational guidance, since they show how large a proportion of their matriculants enter gainful employment;

Second, arguments for emphasis on more careful educational and vocational guidance, since they show the persistence in the occupations originally selected, and the relation between college education and the occupations ultimately entered;

Third, discussion of the relative vocational stability of various groups of women and, in connection with future investigations, of women compared with men, since they show the average number of years these women remained in a position, and the number and nature of the occupational changes they tend to make;

Fourth, a consideration of the need for follow-up work during the early years of wage earning, since they give information regarding the period during which occupational changes are most likely to be made.

I

The Study Group and Study Method

Why This Study is Needed

The widespread tendency of women of the twentieth century to seek employment in occupations of varying types is producing far-reaching economic, social and educational problems. Yet little research has been done in the field of occupations for college women and many of the investigations which have been made bear on minor points or are based on a too limited number of cases.

Further, there is no justification for an assumption that the findings of investigations in the various phases of vocational guidance would be applicable equally to men and to women. Certainly on the question of permanence or stability of occupation, so highly important to an understanding of the vocational problems of women, it is probable that data on men and on women would differ greatly. If, on the other hand, there were no outstanding differences, this would be a fact well worth establishing.

This question of continuity must be faced in dealing with occupations for women as one of the most frequently brought criticisms is to the effect that women are a risk in business and the professions because of lack of continuity. While the problem has not been investigated in any great detail it has been touched upon in several studies of recent date, indicating the interest felt in having more data upon which to base guidance programs.

For example, Hartson's[1] study of Oberlin College graduates presents data on the vocational stability of alumnae, which indicate that women who engaged in educational and in library work were more stable vocationally than those who engaged in other kinds of work, and that women were less likely than men to change positions or to shift from one kind of work to another. Since marriage still seriously affects the vocational stability of women, the records of the unmarried

[1]L. D. Hartson, "Vocational Stability of Oberlin Alumni," *Proceedings of the 5th Annual Meeting of the National Association of Appointment Secretaries*, 1928.

alumnae were compared with the records of alumni. It was found that the women, on the average, became settled in their final fields of work in 1.4 years, while men required an average of 1.8 years. This does not accord with the general assumption that women are less stable vocationally than men.

The present study is devoted entirely to an analysis of this problem as found in the educational and occupational histories of some 6000 women who matriculated in land-grant colleges and universities at four periods between 1889 and 1922. The purpose is to furnish data giving a picture of the vocational continuity and occupational stability of this group of college women and to investigate relationships between certain aspects of their personal, educational and vocational histories and these data.

Sources of Material

The material used in this study was obtained by the United States Office of Education in connection with its survey of land-grant colleges and universities. Among the schedules was one sent by the co-operating colleges to their matriculants of four periods, 1889-1892, 1899-1902, 1909-1912, 1919-1922. The replies of 37,342 men and women from 48 land-grant institutions have been reported upon in general in the survey of land-grant colleges and universities.[2] Those sent in by 6665 women matriculants are analyzed, in part, in this report.

The use of the questionnaire method for this investigation is justified by the fact that this is a broad survey of the field for the purpose of determining general trends. Most of the questions asked for objective facts, rather than opinions, and were so clearly worded that there was little possibility of misunderstanding on the part of those answering them. The data used in this study were based on the answers to 15 of the total 43 questions. The entire questionnaire is printed in Appendix A.

Number and Distribution of Cases

Six of the 48 land-grant colleges co-operating in the survey did not admit women. Of the 42 represented the Insti-

[2]"Alumni and Former Students," *Survey of Land-Grant Colleges and Universities.* Section of Bulletin, 1930, No. 9. Vol. 1, Part V. Washington, D. C.: United States Government Printing Office, 1930.

tute was able to obtain details as to total number of women matriculants from 31. The others either did not have complete records or had not kept separate figures for men and for women. The reports show that the schedules returned by women from these 31 institutions represent 4.0 per cent of the matriculants of all four periods, 3.2 per cent of those of 1889-1892, 2.5 per cent of those of 1899-1902, 3.1 per cent of those of 1909-1912, and 4.7 per cent of those of 1919-1922.

In the case of certain institutions the percentage is much larger. For example, one-half of the institutions reporting matriculation figures for 1889-1892, one-fifth for 1899-1902, over one-third for 1909-1912, and one-half for 1919-1922 are represented in this study by 10 per cent or more of their matriculants for the given period.

The sample, while small, is fairly evenly distributed over the four matriculation periods and over geographical areas, though there is a variation from institution to institution, as one might expect, some keeping in closer touch with their alumnae than others.

The proportion of married women among the matriculants returning schedules is, as far as can be ascertained from available data, close to the proportion of land-grant college women who marry.

So date of matriculation, geographical distribution and marital status were evidently not factors in the failure to report. Thus the returned schedules probably are representative of land-grant college women. Certainly they tell the story of some 6000 and information regarding the vocational continuity of so large a number of college women is of value in itself, regardless of whether these women are or are not representative of a larger group.

Six thousand, six hundred and sixty-five schedules were available, but eight were discarded because of lack of certain data and 191 others because the women either failed to state marital status or were widowed or divorced, leaving 6466 cases to be used in this investigation. The 163 widowed or divorced women were dropt because they formed a group so small as not to warrant statistical treatment. Very rarely do all the 6466 cases appear in any table because, for any given

point under consideration, certain schedules were found to contain inadequate information and were therefore discarded. However, with the exception of the 191 cases referred to above, no constant group containing inadequacies of reply was discovered, so that the numbers appearing in different tables vary.

Method of Procedure and Treatment of Data

The following outline shows the procedure adopted for this study:

I. Classification of the women on various bases; such as,
   1. marital status
   2. time of matriculation
   3. educational history, including (a) completion or non-completion of work toward a degree, (b) change from one college to another, (c) major field of undergraduate study in college, (d) change in major field of study
   4. time of making occupational choice
   5. pre-college experience in the work of the present occupation.

II. Determination of vocational continuity in terms of:
   1. presence or absence of a history of gainful employment
   2. relation between present employment and the occupation originally chosen
   3. occupational stability as shown by (a) average number of years to a position, (b) number of occupational changes, (c) nature of occupational changes
   4. relation between training received in college and the occupation or occupations followed after leaving college.

III. Study of relationships between findings in I and II to determine whether there is any significant differences in vocational continuity as between certain classes.

Since the purpose of the investigation is to present a picture which shall show clearly the thread of continuity of occupational interest binding together the educational and vocational activities of the women studied, the statistical treatment and the terminology have been kept as simple as possible to prevent their obscuring the view.

II

Number Employed and Persistence in Occupation Originally Selected

Two purposes underly this study — to present accurate quantitative data on the vocational continuity of this group of land-grant college women, and to consider the relation between continuity and certain phases of their personal, educational and vocational histories.

The criteria set up for the measurement of continuity were listed in Chapter I. The reliability and validity of each for the purpose to which it is put will be considered here and in subsequent chapters. This chapter deals with the number of women gainfully employed and their persistence in the occupation originally chosen, as criteria of vocational continuity.

Number of Women Gainfully Employed

Although failure to enter at some time into gainful employment is undoubtedly due in many cases to causes other than lack of vocational interest, it is safe to assume that a strong vocational interest would tend to surmount obstacles to gainful employment and to disregard the lack of need for earned income. The fact that a woman has never been gainfully employed may therefore be considered to a slight degree an indication of lack of vocational interest, and conversely, the fact that she has at some time held a paid position may be indicative of a certain amount of such interest.

Table 1 shows that 18.2 per cent of the women in this study have never held remunerative positions. This apparently small percentage may be due to the economic situation of the women attending land-grant colleges, the direct training for vocations offered by those colleges, the greater ease of entering a vocation after having secured direct training for it, and to other factors.

Because of social tradition marriage is no doubt an element in the absence of occupational history. This is indicated in this group since 32.4 per cent of the married women and only 2.4 per cent of the single women have never been em-

TABLE 1.—DISTRIBUTION OF WOMEN NEVER GAINFULLY EMPLOYED BY MATRICULATION PERIOD, MARITAL STATUS, EDUCATIONAL HISTORY AND TIME OF VOCATIONAL CHOICE

Personal and educational factors	Number and percentage of women from specified matriculation period never gainfully employed										Total number reporting
	1889-1892		1899-1902		1909-1912		1919-1922		All		
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	
Marital status											
Married	47	48.4	126	42.7	276	32.0	655	30.4	1104	32.4	3406
Single	4	7.1	10	5.4	9	2.0	51	2.1	74	2.4	3056
Educational history											
Degree	39	31.4	83	21.8	164	15.5	326	9.7	612	12.5	4888
Original college	..	..	..	..	157	15.6	303	9.6	..	..	..
Original field	..	..	..	..	147	15.4	276	10.2	..	..	..
Other field	..	..	..	..	10	17.5	27	6.3	..	..	..
Other college	..	..	..	..	7	15.2	23	11.5	..	..	..
No degree	12	41.3	53	48.1	121	48.4	379	32.0	565	35.9	1573
Vocational choice											
Before college	28	28.8	60	19.6	165	17.7	435	13.1	688	14.8	4645
During college	..	..	16	17.2	48	21.1	123	14.2	..	..	..
After graduation	..	..	30	58.8	21	38.1	62	36.4	..	..	..
After college entrance	23	43.3	75	42.8	116	32.1	251	30.7	465	33.0	1406
All	51	33.3	136	28.3	285	21.9	706	15.5	1178	18.2	6462

ployed. Unfortunately the schedule did not ask for the date of marriage, thus making it impossible to determine how many women married immediately after leaving college and so were under less economic necessity of earning a living than were the single women. This point will be discussed in more detail later.

The question arises as to how these land-grant college women compare with women from other types of colleges in respect to the percentage who have never been gainfully employed. Miner[3] estimated that 42 per cent of the 864 undergraduate women majoring in the division of science and literature and arts in the University of Minnesota would be under no economic necessity to support themselves after graduation. This percentage, however, cannot be compared, except in a very general way, with the 18.2 per cent of women in land-grant colleges who never worked for a living, since many of the undergraduates who Miner estimated would not need to earn their own living may nevertheless have later taken paid positions, while, on the other hand, some of the land-grant college women who entered remunerative employment may have been economically independent.

Percentages from the University of Pittsburgh[4] obtained for the years 1902-1927 can be more closely compared with the figures from the land-grant colleges. Of 431 alumnae of this institution, 17, or 3.9 per cent, reported having done no remunerative work. Why this percentage should be so much smaller than the percentage in land-grant colleges cannot be fully explained on the basis of the available data. A possible explanation is that the tradition that "woman's place is in the home" may be stronger among the people from whom land-grant colleges draw many of their students than it is among the urban group supplying the University of Pittsburgh.

Another investigation which offers comparable figures is that made in 1918 by Mary Van Kleeck.[5] Of the 16,739 gradu-

[3]James B. Miner, "Vocational Census of College Students," *Educational Review* L, 144-165. (September, 1915.)

[4]Alice L. Ebersbach, "The Vocational Stability of University of Pittsburgh Alumnae," *Proceedings of the National Association of Placement and Personnel Officers*, 1929, 42-44.

[5]Mary Van Kleeck, "A Census of College Women," *Journal of the Association of Collegiate Alumnae*, XI, 557-591. (May, 1918.)

ates of eight women's colleges and one co-educational institution studied, 30.4 per cent had never been gainfully employed. Since these women were graduated during the years 1890-1915, they should be compared, not with the whole group of land-grant college women, but with those who matriculated during a comparable period of time, the first three periods, and who received degrees. Of this group of land-grant college women only 17.4 per cent had never undertaken paid work. The difference between 30.4 per cent and 17.4 per cent is too large to be attributed to chance. It is apparent that during the years 1890-1915 a larger proportion of women of land-grant colleges were gainfully employed than of graduates of the liberal arts colleges studied by Van Kleeck. It would be interesting to know whether this same ratio holds today or whether there has been a relatively increased tendency on the part of liberal arts college graduates to enter paid work.

Persistence in Occupation Originally Selected

Although the fact that a woman has at some time held a remunerative position is only indirectly connected with the question of vocational continuity, data on the proportion of women engaged at the date of the study in the same occupation as that originally selected may be assumed to bear directly on the question of vocational continuity.

Table 2 presents such data, showing not only the number engaged in the occupation originally selected, but also the number engaged in work closely allied to such occupation. Only the figures which pertain to the group as a whole will be discussed at this point, consideration of the differences between various classes being reserved for later chapters. Information was obtained not only on the type of work chosen but on the time of making the vocational decision, before, during or after college.

Apparently there was some misunderstanding among the married women as to the meaning of *present occupation.* Some of them evidently interpreted it as homemaking, while others answered from the basis of the last remunerative position held before marriage. In order to secure uniformity

Table 2.—Women of the second and third matriculation periods employed at time of survey in the occupation originally selected, in an allied, or in a non-allied occupation distributed according to marital status, educational history and time of vocational choice

Personal and educational factors and matriculation period	Number and percentage of women employed in										Total number reporting
	Occupation originally selected		Other occupation								
			Not stated whether allied		Allied		Not allied		All		
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	
Marital status											
Married	350	55.2	24	3.7	149	23.5	111	17.5	284	44.7	634
Single	1710	67.6	20	0.7	397	15.7	401	15.9	818	32.4	2528
Educational history											
Degree	1808	68.9	29	1.1	448	17.0	337	12.8	814	31.0	2622
Original college	1716	69.6	29	1.1	414	16.7	306	12.4	749	30.4	2465
Original field	1503	70.2	19	0.8	360	16.8	256	11.9	635	29.7	2138
Other field	213	65.1	10	3.0	54	16.5	50	15.2	114	34.7	327
Other college	92	58.5	..	..	34	21.6	31	19.7	65	41.4	157
No degree	252	46.6	15	2.7	98	18.1	175	32.4	288	53.3	540
Vocational choice											
Before college	1575	64.9	35	1.4	425	17.5	391	16.1	851	35.0	2426
During college	414	65.2	6	0.9	106	16.7	108	17.0	220	34.7	634
After college entrance	473	65.4	9	1.2	120	16.5	121	16.7	250	34.6	723
All 1909-1912	312	57.4	14	2.5	106	19.5	110	20.4	230	42.4	542
All 1919-1922	1748	66.7	30	1.1	440	16.7	402	15.3	872	33.3	2620
Total both periods	2060	65.1	44	1.3	546	17.2	512	16.2	1102	34.9	3162

schedules of all those women who were not gainfully employed at the date of the survey were discarded. The married women who listed under *present occupation* both homemaking and some other occupation were included in the tabulation on the assumption that the questions had been answered in regard to the gainful occupation.

The matriculants of the first and second periods were not included because the small number of married women left after those without present gainful employment had been eliminated could not have been reliably compared with other groups. Their inclusion in the table would have had little or no effect on the total percentages. The total number of women included in the table is 3162, of whom approximately 20 per cent were married.

At the time of the survey 66.7 per cent of the women of the 1919-1922 group and 57.4 per cent of those of the 1909-1912 group were engaged in the occupation originally selected. There are no norms whereby it may be determined whether these are large or small percentages. However, the question as to whether work in the occupation originally chosen indicates vocational continuity must be considered. The majority of women of the fourth matriculation period had been out of college only from two to four years, and so had relatively little opportunity or need of shifting to some other occupation. Even two or three years of experience in the occupation originally selected, however, indicates a certain degree of continuity of vocational interest. The women of the third matriculation group may be assumed to have been employed for from 10 to 12 years, a period long enough to warrant the statement that the 57.4 per cent who were engaged in the occupation originally selected showed a high degree of vocational continuity.

It is true that the woman who enters and continues in an occupation may do so for reasons other than interest—inertia, lack of knowledge about other possible occupations, economic necessity, or family obligations. Nevertheless, it is safe to say that total lack of interest is likely to lead sooner or later to a change to another occupation by reason either of failure in the original occupation or of deliberate choice. The possible factors involved in keeping 2060 of the 3162 women for a vary-

ing number of years in the occupation originally selected are numerous. It may be that intelligence was directed toward the original choice. It may be that by sheer accident the original choice was a happy one. It may be that, while the choice was not the best that might have been made, a combination of circumstances served to make the occupation tolerably satisfactory.

The women in occupations other than those originally selected were almost evenly divided between work that is closely allied to the occupation originally chosen and work which is totally different, 17.2 per cent of all women being engaged in allied occupations, and 16.2 per cent in non-allied occupations. A shift from one occupation to another closely allied to it may represent, not lack of continuity, but simply a normal vocational growth. In so far as this holds true 82.3 per cent of the women studied have persisted in the occupation which they decided upon when making their vocational decision as to type of work to enter.

The relatively small percentage of women who did not at any time work for a living and the marked tendency on the part of those who did work to continue in the occupation originally selected, or one closely allied to it, would seem to indicate a high degree of vocational continuity among these land-grant college women. This conclusion must, however, be checked by other indices of vocational continuity considered in the next two chapters.

III

Number of Jobs, Occupations, Training Fields

Another criterion of vocational continuity is occupational stability. For the purposes of this study stability has been determined in several ways, average number of years to a position, number of occupations engaged in, and nature of the changes made in occupations.

The term stability is, of course, not intended to carry any favorable connotation. The desirability of occupational stability is far from being either proved or disproved. Stability may result, as has already been stated, from inertia or from necessity, a family situation or a health problem requiring residence in a particular locality, for example, rather than from an abiding interest in the work being performed. It may be the road to success or the road to stagnation.

As to whether or not stability is desirable the only measure available in this investigation is that of earnings—a comparison of the earnings of the more stable with those of the less stable. To fully determine the question other factors, chiefly psychological, would have to be studied. What can be presented now is a description of the occupational stability found in this group of land-grant college women, given in this chapter, and some discussion of the relation between occupational stability and earnings in the group to come later in the study.

Number of Years to a Position

Table 3 shows the average number of years to a position in terms of both means and medians computed from a distribution table of individual averages using an interval of one-half year. Change of position was interpreted as meaning either working for a new employer, or change in type of position even though it might be under the same employer. The computation of individual averages was based on answers to the question, "List in consecutive order your positions since you left college. Include any years spent in graduate work."

TABLE 3.—AVERAGE NUMBER OF YEARS TO A POSITION AND DISTRIBUTION OF WOMEN OF THE FOUR MATRICULATION GROUPS REACHING VARIOUS LEVELS OF AVERAGE NUMBER OF YEARS TO A POSITION BY MARITAL STATUS, EDUCATIONAL HISTORY AND TIME OF VOCATIONAL CHOICE

Matriculation period and distributive classes	Average number of years to a position					Women averaging				Total number women reporting
	Mean	Standard deviation	Standard error of mean	Median	Standard error of median	Two years or more to a position		Five years or more to a position[1]		
						Number	Per cent	Number	Per cent	
Total all groups	2.72	2.13	.03	2.25	.04	3023	63.0	..	..	4797
1889-1892	6.33	4.56	.45	4.93	.56	59	86.8	35	51.5	68
1899-1902	5.62	4.32	.27	4.34	.33	235	91.1	117	45.3	258
Marital status										
Married	3.64	3.02	.27	2.89	.34	103	82.4	29	23.2	125
Single	7.47	5.78	.50	5.76	.63	132	99.2	78	58.6	133
Educational history										
Degree	5.64	4.66	.31	4.45	.39	204	91.5	103	46.2	223
No degree	4.70	3.13	.54	3.48	.68	29	87.9	12	36.3	33
Vocational choice										
Before college ..	5.24	4.10	.30	4.26	.37	169	91.3	135	73.0	185
After college entrance	6.56	6.21	.73	4.56	.92	66	91.7	34	47.2	72
1909-1912	3.35	2.39	.08	2.74	.08	738	78.7	166	17.7	938
Marital status										
Married	2.80	2.04	.09	2.34	.11	364	67.2	65	12.0	542
Single	4.11	2.59	.14	3.33	.17	374	94.4	101	25.5	396
Educational history										
Degree	3.25	2.15	.07	2.69	.09	648	78.3	137	16.5	828
No degree	4.08	3.45	.33	3.07	.41	88	81.5	28	25.9	108
Vocational choice										
Before college ..	3.48	2.50	.09	2.74	.11	560	78.5	136	19.1	713
After college entrance	2.96	1.99	.10	2.60	.12	329	75.6	55	12.6	435
1919-1922	2.41	1.25	.02	2.01	.03	1993	56.4	1002	28.3	3535
Marital status										
Married	1.97	1.13	.03	1.74	.04	668	47.7	295	21.0	1401
Single	2.47	1.29	.03	2.62	.03	1325	62.1	707	33.1	2134
Educational history										
Degree	2.18	1.14	.02	1.94	.03	1547	54.7	746	26.4	2827
No degree	2.65	1.50	.06	2.34	.07	458	65.6	264	37.8	698
Vocational choice										
Before college ..	2.30	1.26	.03	2.05	.03	1533	57.3	786	29.4	2674
After college entrance	2.21	1.24	.04	1.95	.05	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

The following sample record illustrates the form in which the replies were given:

Positions	Number of years
High school teaching	1
Elementary school teaching	2
High school teaching	5
Graduate student	1
College teaching	2
Graduate student	2
Associate professor	2

In this case the number of years gainfully employed is 12, and the number of positions is five, an average of 2.4 years to a position. The years spent in graduate study are not included because that study was not combined with a position which occupied the major part of the time. In cases where there was such a combination, the years involved were credited to the position. Fractions of years in a position were changed to the nearest third and added. Fractions in the final sum of years employed were changed to the nearest year. Summer work done by those whose major occupation was teaching was not included because the teaching itself was counted as a year's work whenever it continued for seven months or more.

The range in mean number of years to a position reported by individuals is wide, from under a year in all four matriculation groups to 19.5, 28.0, 16.5 and 10.5 years in the first, second, third and fourth matriculation groups respectively. For this reason the median is probably a more accurate measure of central tendency than is the mean. On the other hand, the mean because of its lower probable error is the more useful of the two in studying the relation between vocational continuity and the personal, educational and vocational history. Therefore both the means and the medians are given.

For the entire group of women in the study the median number of years spent in one position was 2.25, and the mean, 2.72. Because there is a steady increase in the average number of years to a position from the fourth matriculation period back to the first, a statement of the median for each period will give a better idea of the length of time these women stayed in one position than does the single median for the whole group. The median for the women of the first period,

1889-1892, is 4.93 years, for those of the second, 1899-1902, 4.34 years, for those of the third, 1909-1912, 2.74 years, and for those of the fourth, 1919-1922, 2.01 years. There is a corresponding decrease in the means from the first to the fourth matriculation period. Although this difference between the matriculation periods will be discussed in greater detail in a later part of this report, it should be pointed out here that the greater average number of years in a position found in the older group of women is due largely to the fact that the earlier the matriculation date the longer it is possible for the few individuals with extremely stable records to have worked in one position. This extension of the distribution upward would naturally result in larger means and medians in the earlier decades.

For those interested in having more detail as to the number of years in a position reported by this group of land-grant college women Table 3 presents the standard deviations and also the standard errors of the means and of the medians.

The standard deviation shows how far individual reports tend to scatter from the mean of the group. About 68 per cent of them will fall in the range between one standard deviation below and one standard deviation above the mean. For example, in the second matriculation period group, 1899-1902, the mean number of years reported in one position was 5.62. Since the standard deviation is 4.32 years this indicates that 68 per cent of the women were in one position for a period of time ranging from 1.30 years to 9.94 years. Details for other groups may be readily seen by reference to Table 3.

Again, it is desirable to know how reliable the sample is, how much the average would be likely to be changed if the study were made over again, if another sample of some 6000 land-grant college women were studied. This may be learned from the standard errors of the means and of the medians as given in Table 3.

For example, for the women of the second matriculation period the mean number of years in a position is $5.62 \pm .27$, that is the mean number of years is 5.62 with a standard error of .27. This indicates that if another sample of the same number of land-grant college women of this matriculation group were studied the mean number of years in a posi-

tion could be expected to be between 5.35 and 5.89 years (a range of one times the standard error) with one chance in three of being wrong; or the mean could be expected to be between 5.08 and 6.16 years (a range of two times the standard error) with one chance in 17 of being wrong; or between 4.81 and 6.43 years (a range of three times the standard error) with one chance in 135 of being wrong.

In other words, where there are over 30 cases in a sample the true average will probably be within twice the standard error from the observed average for 19 samples out of 20, and within three times the standard error 369 times out of 370. Where the number of cases is 30 or under the possibility of error is larger.[6]

Thus it is practically certain that in any other sample of these land-grant college women of all four matriculation periods the mean number of years to a position would be 2.72±.09. Details for other groups and sub-groups are available from Table 3.

In an attempt to hold constant the factor of number of years of employment, another method of measuring the average number of years to a position was devised. Table 3 shows the number and percentage of women whose mean length of time in one position was two years or longer, the number and percentage of women of the first three matriculation periods who had an average of five years or more to a position, and the number and percentage of women of the fourth period who had an average of three years or more to a position.

An explanation of the reason for using these three average-levels may facilitate an understanding of the significance of the data presented in the table. The average-level of two years was chosen for the women of all four matriculation periods because that is the highest level which all might have been able to attain. Those who matriculated in 1922 might be assumed to have been in their second year of wage earning at the time the survey was made. They could not possibly, therefore, have had an average of more than two years to a position, although the mean for the whole fourth period

[6]Mordecai Ezekiel, *Methods of Correlation Analysis*, pp. 7, 16-26. New York: John Wiley and Sons, 1930.

group was slightly higher due to the fact that some women left college and began working without taking a degree and also that some were in their third and some in their fourth year of work due to dates of graduation. Since this average-level was below all the means, it was felt that it might be so all-inclusive that differences which really existed between various classes might fail to appear. A second and higher level was therefore also used.

An average-level of five years was selected for the women of the first three matriculation groups because, while it is slightly lower than the means of the first and second groups, it is sufficiently higher than the means of the third matriculation period to show variations in certain classes if such variations exist. The use of the same average-level for the women of the first three matriculation periods makes possible a comparison between groups which would have been impossible had a different level been used for each period. That the five-year level is too low to show many differences between the various subdivisions of the women of the first and second periods is not a serious matter since the small number of women in these matriculation periods precluded detailed investigation of differences in occupational stability between those with various educational and vocational histories.

Since five years was obviously too high an average-level for the women of the fourth matriculation period, a three-year average was adopted for them as the level at which differences between the various classes might reasonably be expected to appear.

A consideration of the differences between classes in the average length of time spent in one position will be reserved for later chapters. Here only those data which show how long the whole group of land-grant college women tended to remain in one position are discussed.

Table 3 shows that only 63.0 per cent of the entire group of women remained in one position on an average of at least two years. Of the women of the fourth matriculation period 28.3 per cent remained in one position for an average of three years or longer, and 25.1 per cent of the women of the first three matriculation groups remained in one position for an average of five years or longer.

Considered from the standpoint of the length of time that had elapsed since graduation, it might well have been possible for all the women in the first three matriculation groups to have remained in one position for at least 10 years. For that reason the percentage which remained at least five years in a position seems rather small. However, it is impossible, in the absence of comparable data, to reach a final conclusion on this point.[7]

Number and Nature of Changes in Occupation

Another and probably more valid measure of vocational continuity is the number of occupations engaged in and the nature of the changes from one occupation to another. Data on the number and kind of occupational changes were secured from the same section of the schedule which furnished information regarding the average number of years to a position.

The first step was to make a classification of all the occupations engaged in by the women studied. As far as possible this classification was built on a functional basis, although in a few instances it was impossible — at least inadvisable for the purposes of this study — to hold entirely to this principle and the divisions were made on the basis of the knowledge or skill required in the performance of the work. Thirty-two occupations were engaged in by the 3737 women whose occupational changes were studied. The following list shows the occupations and their sub-divisions:

CLASSIFICATION OF OCCUPATIONS

1. Agriculturist
   - Dairyman
   - Farmer
   - Floriculturist
2. Assistant to
   - Dentist
   - Doctor
3. Civil engineer

[7]The report of the American Woman's Association, *The Trained Woman and the Economic Crisis,* (New York, 1931) shows (p.59) that 73.0 per cent of the members reporting had held the same position for the past five years. This is a group of mature women comparable with the first three matriculation period groups in age. It is not possible to say from data presented what was the average length of time these women were in one position during their working lives.

4. Clerical and other office worker
    - Accountant
    - Bookkeeper
    - Computing machine operator
    - Purchasing agent
    - Secretary
    - Stenographer
    - Typist
5. Dentist
6. Department store worker
    - Buyer or seller
    - Manager
    - Stylist
    - Worker in education department
7. Designer
8. Dressmaker
9. Educator
    - Teacher
        - Americanization teacher
        - Athletic coach
        - Dramatics coach
        - Kindergarten teacher
        - Occupational therapist
        - Special teacher of handicapped children
        - Supervisor
        - Various subject matter fields, teacher of
        - General elementary and grammar school teacher
    - Administrator
10. Executive secretary of various organizations
11. Food-worker, professional level
    - Manager cafeteria or tea room
    - Nutrition specialist
    - United States food administrator
    - Hospital dietitian
12. Home agent and related worker
    - Home demonstration agent
    - 4-H Club leader
    - Demonstrator in business
13. Home and food service worker
    - Housekeeper
    - Maid
    - Waitress
14. Institutional manager
15. Interior decorator

16. Journalist
    - Editor
    - Proof reader
    - Reporter
    - Writer
    - Publicity worker
17. Lawyer
    - Law clerk
18. Nurse
19. Operator or manager of business
20. Personnel worker
    - In business or industry
        - Director of employment agency
    - In schools
        - Dean of women or of girls
        - Personnel director
        - Vocational guidance counselor
21. Pharmacist
22. Physician
23. Psychology and mental hygiene, worker in the field of
24. Public entertainer
    - By means of fine arts
        - Musician
        - Actress
        - Artist
    - By use of other means
        - Lecturer
        - Lyceum entertainer
        - Performer or director in shows or stunts of various kinds
25. Religious worker
    - Director of religious education
    - Missionary
    - Preacher
26. Research worker
27. Salesman of
    - Insurance
    - Real estate
    - Securities
28. Scientist
    - Bacteriologist
    - Botanist
        - Seed analyst
    - Chemist
    - Laboratory technician
    - Serologist

29. Social worker
    - Army hostess
    - Case worker
    - Coordinator
    - Juvenile court worker
    - Medical social worker
    - Playground director
    - Psychiatric social worker
    - Recreation worker
    - Settlement worker
    - Travelers Aid worker
    - Visiting teacher
    - Y. W. C. A. secretary
30. Statistician
31. Telephone operator
32. War worker

A few difficulties were encountered in preparing the classification. There was, for instance, some question as to the advisability of listing as one occupation the various kinds of work which appear under the heading *social worker*. It seemed, nevertheless, that they were too closely related both functionally and in background of training to warrant calling them different occupations for the purpose of this investigation. As a matter of fact, grouping them together as one occupation had little or no effect on the total number of occupations engaged in by individuals or by the group because in only the rarest instances did a woman shift from one type of social work to another. When a shift was made it was almost invariably from social work to some entirely different occupation. It was difficult, too, in some cases to distinguish between *religious worker* and *social worker*, because the two may do similar kinds of work in relatively similar surroundings. The main purposes motivating the two kinds of work, however, seem to be sufficiently different to warrant classifying them as two different occupations. *Visiting teacher* was also difficult to classify. The work is so closely connected with schools that it might well have been considered one of the phases of the work of an *educator*. It happens, though, that it is most frequently considered a branch of social work and that the training is similar to that for other phases of social work.

The various kinds of work listed under *public entertainer* are undoubtedly separate occupations because of the entirely different kinds of training which they require. If a woman changed from one of the fields of public entertaining to another as, for instance, from music to art, she was considered to have engaged in two different occupations. A *lyceum entertainer*, on the other hand, might be either a musician, an actress, or an artist. The various occupations within the group are, however, distinctly different from other occupations and have a common function. For these reasons as well as for convenience they were combined under one heading. Occupations falling within this general field were interpreted on their individual merits.

The changes from one occupation to another were not all equally abrupt. Certain changes involved entirely new backgrounds of training. Other changes were less radical, the new occupation being based on the same training which had been needed for the old. A change of occupation which requires entirely new training certainly represents a sharp break in the occupational history of a worker. Accordingly, the number of training fields involved in the occupations engaged in would seem to be an excellent measure of vocational continuity.

It is impossible to classify the training fields as definitely as the occupations were classified. Each individual list of consecutive occupations had to be considered on its own merits for the training fields involved. Authority for the decisions rests largely on the writer's experience as a high school and college teacher, supported by a study of college catalogues, Robertson's[8] *American Universities and Colleges, Training for the Professions and Allied Occupations,*[9] Hatcher's[10] *Occupations for Women,* and similar sources of information.

In most cases the various branches of an occupation were considered as requiring a common background of training. This was not true, however, of the various kinds of work classified under *public entertainer* or *scientist.* In these two

[8]David Allan Robertson, Editor, *American Universities and Colleges.* New York: Charles Scribner's Sons, 1928.

[9]Bureau of Vocational Information, *Training for the Professions and Allied Occupations.* New York: Bureau of Vocational Information, 1924.

[10]O. L. Hatcher, *Occupations for Women.* Richmond, Va.: Southern Woman's Educational Alliance, 1927.

fields the various branches of the occupation clearly grow out of different fields of training. On the other hand, a number of different occupations may require a common background of training. For instance, *demonstrator, designer, dietitian, dressmaker, home* and *food service worker, institutional manager, interior decorator* are all occupations for which courses in home economics may be preparation. *Teaching* and *journalism* may also have a home economics training background provided the teaching or writing is done in the field of home economics. The *social worker* and the *teacher of sociology,* have often had similar training as have the *journalist* and the *teacher of English. War worker,* an occupation which was listed rarely, was considered as involving a training field similar to that of some occupation engaged in previously.

In cases where there are two or three distinct kinds of training for a particular occupation, as the occupation of *research worker,* and one of the phases of training was the same as that underlying some other occupation engaged in, the two occupations were considered as having a common training background. For example, if a woman listed *teacher of history* and *research specialist in history* as two occupations in which she had been engaged, her case was tabulated as representing two occupations and one training field, since the training in history would be common to both occupations. Similarly, an occupational history of *teacher of history,* followed by *teacher of English* would be tabulated under one occupation and one training field because the technique of teaching would be common to both in spite of the difference in subject matter background. On the other hand, a case of *teacher of history, research fellow in English* would be tabulated as two occupations and two training fields, since the techniques of teaching and of research are different and the subject matter concerned is also different.

It is apparent that there is no hard and fast scheme for determining the number of training fields involved in any individual occupational history. In general it may be said that the purpose has been to determine whether there has been a certain continuity in background of training from one occupation to another even though new elements of training

PATIONS DISTRIBUTED ACCORDING TO MARITAL STATUS, EDUCATIONAL HISTORY AND TIME OF VOCATIONAL CHOICE

Matriculation period and distributive classes	Number and percentage of women reporting number of occupations										Total number reporting
	One occupation		Two occupations		Three occupations		Four occupations		Five occupations		
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	
1909-1912	272	56.4	154	31.9	44	9.1	11	2.2	1	.2	482a
Marital status											
Married	70	58.3	31	25.8	18	15.0	1	.8	..	..	120
Single	202	55.8	123	33.9	26	7.1	10	2.6	1	.2	362
Educational history											
Degree	241	56.4	139	32.5	36	8.4	11	2.5	..	..	427
Original college and original field	209	55.7	124	33.0	32	8.5	10	2.6	..	..	375
Other college and original college other field	32	61.5	15	28.8	4	7.6	1	1.9	..	..	52
No degree	31	56.3	15	27.2	8	14.5	..	..	1	1.8	55
Vocational choice											
Before college	210	60.0	109	31.1	26	7.4	4	1.1	1	.2	350
During college	46	48.4	35	36.8	9	9.4	5	5.2	..	..	95
After college entrance	61	48.0	43	33.8	16	12.5	7	5.5	..	..	127
1919-1922	2617	80.3	567	17.4	67	2.0	4	.1	..	..	3255a
Marital status											
Married	894	82.9	170	15.7	13	1.1	1	.1	..	..	1078
Single	1723	79.1	397	18.2	54	2.4	3	.1	..	..	2177
Educational history											
Degree	2132	81.5	436	16.6	43	1.6	2	.1	..	..	2613
Original college and original field	1711	80.9	362	17.1	39	1.8	2	.1	..	..	2114
Other college and original college other field	421	84.3	74	14.8	4	.8	..	..	..	..	499
No degree	485	75.5	131	20.4	24	3.7	2	.3	..	..	642
Vocational choice											
Before college	2033	81.7	407	16.3	43	1.7	4	.1	..	..	2487
During college	486	78.8	111	18.0	19	3.0	..	..	..	..	616
After college entrance	584	76.0	160	20.0	24	3.1	..	..	..	..	768

a. Of those having an occupational history 148 for the third matriculation period and 555 for the fourth matriculation period were not included in this table either because they had been gainfully employed for less than ten years in the third matriculation period or two years in the fourth matriculation period or because the data could not be accurately interpreted.

might be added, or whether there has been a relatively sharp break in the knowledge and skill and training needed for the work. In a sense, of course, every new occupation involves certain elements of training in common with those needed for any other occupation which has been followed. In another sense, no two occupations require exactly the same training. It was the purpose in this study to avoid both these extremes and to estimate the number of training fields involved in a spirit of common sense as well as of scientific accuracy.

Tables 4 and 5 show the number of occupations engaged in by women of the third and fourth matriculation groups and the number of training fields involved in those occupations. The women who matriculated in 1919-1922 and who finished college in four years and had a continous occupational history might be expected to have been employed from two to five years, while the women of the third period, matriculating in 1909-1912, who had a similarly continuous occupational history might have been employed from 12 to 15 years. A few in each matriculation group, evidently women who had earned before entering college, had a much longer period of employment than that to be expected for the group. The number of such cases, however, was so small as to be negligible in an estimate of the average time span of employment. Accordingly, before tabulating the number of occupations and the number of training fields, all the schedules showing occupational histories of less than two years' duration in the fourth matriculation period group and all those of less than 10 years' duration in the third matriculation period group were discarded. This gave an average time spread of four years for the fourth, and six years for the third matriculation period group. Each of the two groups was thus made sufficiently homogeneous with reference to the length of time spent in gainful employment to warrant counting the number of occupations and the number of training fields for each without regard to the exact number of years that individual women had been employed. The cases falling within the two periods are of necessity tabulated separately because of the wide difference between the two groups in possible number of years of employment.

ING FIELDS DISTRIBUTED ACCORDING TO MARITAL STATUS, EDUCATIONAL HISTORY AND TIME OF VOCATIONAL CHOICE

Matriculation period and distributive classes	Number and percentage of women reporting number of training fields										Total number reporting
	One field		Two fields		Three fields		Four fields		Five fields		
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	
1909-1912	329	72.1	105	23.0	21	4.6	..	..	1	.2	456a
Marital status											
Married	82	72.5	23	20.3	8	7.0	..	..	..	..	113
Single	247	72.0	82	23.9	13	3.7	..	..	1	.2	343
Educational history											
Degree	296	72.9	95	23.3	15	3.6	..	..	..	..	406
Original college and original field	262	72.9	85	23.6	12	3.3	..	..	..	..	359
Other college and original college other field	34	72.3	10	21.2	3	6.3	..	..	..	..	47
No degree	33	66.0	10	20.0	6	12.0	..	..	1	2.0	50
Vocational choice											
Before college	255	76.6	67	20.1	10	3.0	..	..	1	.3	333
During college	55	62.0	26	29.9	6	6.9	..	..	..	..	87
After college entrance	71	60.6	37	31.6	9	7.6	..	..	..	..	117
1919-1922	2807	87.1	372	11.5	39	1.2	3	..	..	..	3221a
Marital status											
Married	939	87.7	122	11.4	8	.7	1	.1	..	..	1070
Single	1868	86.8	250	11.1	31	1.8	2	.1	..	..	2151
Educational history											
Degree	2305	89.2	256	9.9	22	.8	1	..	..	..	2584
Original college and original field	1870	89.4	200	9.5	19	.9	1	..	..	..	2090
Other college and original college other field	435	88.0	56	11.3	3	.6	..	..	..	..	494
No degree	502	78.8	116	18.2	17	2.6	2	.3	..	..	637
Vocational choice											
Before college	2190	88.7	248	10.0	26	1.0	3	.1	..	..	2467
During college	513	84.7	83	13.7	9	1.4	..	..	..	..	605
After college entrance	617	81.8	124	16.4	13	1.7	..	..	..	..	754

a. Twenty-six of those listed for the third matriculation period and 34 of those listed for the fourth matriculation period in Table 4 are not included in this table because the statements regarding the occupation were not detailed enough to indicate the training field.

Differences in the number and nature of occupational changes between the groups having various personal, educational and vocational histories will be discussed later. At this point only the figures for the total number of women in the fourth and third matriculation periods will be considered.

Of the 3255 fourth period women left after those for whom the data could not be accurately interpreted and those employed less than two years had been discarded, 2617, or 80.3 per cent, had engaged in only one occupation, 17.4 per cent in two occupations, 2.0 per cent in three occupations, and 0.1 per cent in four occupations. Among the third period women, 56.4 per cent had engaged in one occupation, 31.9 per cent in two occupations, 9.1 per cent in three occupations, 2.2 per cent in four occupations, and 0.2 per cent in five occupations.

Kitson and Kirtley[11] found that 89.0 per cent of the 1000 eminent women listed in *Who's Who* whose occupational histories they investigated had made no change in their occupations. This percentage is not exactly comparable with the percentage of land-grant college women who had remained in one occupation because of the difference between the two investigations in number of years covered by the occupational histories and the possible difference in classifications of occupations. Some of the women in *Who's Who* had doubtless been employed longer than 15 years, since reference is made to the number of changes made before and after the age of 55; others had probably been employed for a much shorter period of time.

It is possible that the *Who's Who* group is fairly comparable with the land-grant college women matriculating in 1909-1912. In so far as this is true, we find the contrast of 89.0 per cent of the *Who's Who* women and 56.4 per cent of the land-grant college women remaining in one occupation for something over 10 years.

To the extent that one may judge by these two studies, it would seem that those women who attain sufficient prominence to find a place in *Who's Who* make fewer occupational changes than are made by an unselected group of college

[11]Harry D. Kitson and Lucille Kirtley, "Vocational Changes of One Thousand Eminent American Women," *School and Society,* XIX, 110-112. (January 26, 1924.)

women such as those under consideration. Whether success in any field of work tends to prevent changes in occupation, whether relative occupational stability is a factor in success, or whether there is no direct causal relationship between occupational stability and success cannot be determined from these two investigations.

Unfortunately the study of 431 alumnae of the University of Pittsburgh[12] who received their undergraduate degrees between the years 1902 and 1927 does not offer comparable figures. A comparison of this group with the land-grant college women of this study would be interesting because while the two groups probably have a somewhat similar economic background, the social and educational backgrounds differ, one being urban and the other largely rural.

Hartson,[13] in his investigation of 6831 graduates of Oberlin College, compiled very detailed data on the number of occupations entered and the proportions of graduates remaining in the original occupation. Since, however, in many of his tabulations he does not separate the data for men and for women, comparisons cannot be made between his findings and those of the present study.

Although the business and professional women studied by Elliott and Manson[14] are not all college women, their vocational histories may quite reasonably be compared with the vocational histories of college women. Elliott and Manson use three measures of occupational stability: (1) the number of different types of work engaged in, (2) the number of positions held, (3) the number of years spent in working for the present employer. A brief summary of their findings relative to occupational stability indicate points for comparison with the land-grant groups:

(1) 77.0 per cent of the women who had had vocational experience of less than five years were doing the kind of work originally entered, and only 4.0 per cent had changed kinds of work more than twice.

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[12]Ebersbach, *op. cit.*

[13]L. D. Hartson, *op. cit.*

[14]Margaret Elliott and Grace E. Manson, "Earnings of Women in Business and the Professions," pp. 92-94. *Michigan Business Studies,* Vol. III, No. 1. Ann Arbor: University of Michigan, 1930.

(2) Of the women who had had 30 or more years of experience, 43.0 per cent were engaged at the time of the investigation in the kind of work in which they had begun.

(3) 9.0 per cent of the women who had been employed for 30 years or more had held only one job, and 25.0 per cent had held four or more different jobs.

(4) 44.0 per cent of the women who had worked for 30 years or more had been with the same employer for 18 years or longer, and only 5.0 per cent of them had been with their most recent employers less than two years.

(5) The conclusion reached on the basis of the data presented was that women do not shift heedlessly about in their occupational experiences.

Turning now to a consideration of the number of training fields involved in the occupations entered, it is found that, while most of the occupational changes made by the fourth matriculation period women involved new training fields, those of the third matriculation group made many changes in occupations which did not require new training. No change in occupation was made by 80.3 per cent of the women of the fourth group, and 87.1 per cent made no change in training field; but of the women of the third matriculation period group only 56.4 per cent had remained within one occupation in contrast with 72.1 per cent who had remained within a single training field. Apparently there is much less tendency over a long period of time to enter new training fields than there is to enter new occupations. More detail may be obtained by reference to Tables 4 and 5.

Although a percentage of 72.1 of the 1909-1912 group who remained within the limits of one training field for at least 10 years of their occupational experience is indicative of a fairly high degree of occupational stability, a record of 105 women out of 456, or 23.0 per cent, who, in that length of time made at least one shift involving a new training background, and 21 women, or 4.6 per cent, who made two such shifts suggests a rather serious waste of effort, and the need for more effective vocational guidance. The 11.5 per cent of the fourth matriculation period women who made one shift

into a new training field background is even more indicative of waste, since their vocational histories have an average time span of only two to five years.

Whatever may prove to be the desirability or lack of desirability of remaining long in one position or of avoiding changes in occupations, there can be little doubt that, with few exceptions, occupational changes which throw the individual into working situations in which she needs an entirely new background of knowledge and skill from that demanded by her former occupation represent serious waste of effort as measured by occupational accomplishment. It is true that the new interest may serve as a mental stimulus to the woman and so may add zest to her living. It is equally true that there is a period of time following the change during which the work is done in a relatively inefficient manner while the new knowledge and skills are being acquired. This is likely to mean a decrease in income and in the satisfaction which derives from achievement. It also means a loss in production from which society as a whole must necessarily suffer in the long run.

It would seem then to be worth while to attempt to isolate any factors which appear to be associated with a high record of stability in one training field to the end that those factors may be more carefully studied in their relations to vocational continuity and that, if they are found to have repeated positive relationship to such continuity, they may be made use of in the training of young women. This will be done in later chapters.

One of the questions that arises is, "Where in the occupational history are these changes most likely to occur?" This question can be partly answered by the data presented in Table 6. The table shows the number of occupations entered during the first five years and the first 10 years of employment, and the number of training fields involved in these occupations. Since relatively few married women were employed as long as 10 years, figures are presented for the married and single women separately.

As is to be expected, the number of women in the fourth matriculation period both married and single who had been employed for 10 years is so small as to be negligible. In the

third and second matriculation period groups, however, the number employed for at least 10 years is large enough to permit of statistical treatment. In the third period group 70.5 per cent of the married women were engaged in one occupation for the first five years, and 61.7 per cent for the first 10 years. The number of married women who worked 10 years is naturally much smaller than the number who worked five years. Although the difference between the percentages of those employed in one occupation for five years and for 10 years is not statistically significant, the difference between the mean number of occupations engaged in during five years of wage earning and the mean number engaged in during 10 years is .17±.06,[15] a significant difference. Among the single women there is a non-significant difference between the percentages of those employed in one occupation for 10 years and the percentages employed for five years. The same group of women entered on the average of 1.33 occupations during the first five years and 1.54 occupations during the first 10 years, a difference of .21±.04, which is statistically significant.

While the single women of the 1899-1902 matriculation group who remained in one occupation for five years showed little tendency to go into a new occupation during the second five years, those who did change made a number of shifts. The result is that whereas they engaged on the average in 1.09 occupations during the first five years, the number of occupations averaged during the first 10 years is 1.21. The difference between these averages, .12±.04, is significant. The married women of the second matriculation group show a significant difference between the percentage who remained in one occupation for five years and the percentage who remained in one occupation for 10 years, as well as between the average number of occupations in which they were employed during the first five years and the average number in which they were employed during the first 10 years.

McCurley,[16] in her investigation of Goucher women of the class of 1922, a group which in point of time is comparable to

[15]See page 117.

[16]Mary T. McCurley, "A Five Year Study of the Occupational Distribution of the Class of 1922 of Goucher College," *Women's Work and Education,* II, No. 1 (February, 1931). Greensboro, N. C.: The Institute of Women's Professional Relations.

the fourth matriculation group of land-grant college women, computed *continuity of occupation* through the first five years. She found that 42.1 per cent of the women remained in one occupation for five years. This is a much smaller percentage than that found among the land-grant college women, for when the married and single land-grant college women are combined to form a group comparable to the Goucher women studied by McCurley, 79.8 per cent remained in one occupation five years.

While McCurley does not explain her technique for determining *continuity of occupation*, she defines the term as continuity in one *field of work*, which as she interprets it is a broader division than *occupation* as used in this report. She includes *homemaking* and *no remunerative work* as two of the six occupations in her classification. Women coming under these two headings are considered in this investigation as having no occupational histories and are not included in the 79.8 per cent who remained five years in one occupation. When these two groups of women who are engaged in non-gainful occupations are dropped from the McCurley distribution, the percentage of those who have *continuity of occupation* through the fifth year falls to 39.1. If the classification of the occupations of the Goucher women had been as detailed as the classification used in the investigation of land-grant college women, the percentage of those who remained in one occupation would undoubtedly have dropped much below 39.1. The difference between 79.8 per cent and a percentage less than 39.1 undoubtedly represents greater occupational stability among the land-grant college women than in the Goucher College group.

Although there was a tendency among the women of all three matriculation periods to make some changes involving new training fields during the second five years of employment, the number of changes in training fields made during the second five years is smaller than the number of changes in occupations during the same period. Not only did these land-grant college women make fewer changes in training fields than in occupations during their working years, but such changes in training fields as were made were a little more likely to occur during the first five years of work than were the changes in occupations.

TABLE 6.—NUMBER AND PERCENTAGE OF WOMEN OF THE 1899-1902, 1909-1912 AND 1919-1922 MATRICULATION GROUPS WITH GIVEN NUMBER OF OCCUPATIONS AND TRAINING FIELDS ENTERED DURING THE FIRST FIVE AND FIRST TEN YEARS OF EMPLOYMENT DISTRIBUTED ACCORDING TO MARITAL STATUS

Number of ocupations and training fields	Number and percentage of women reporting from											
	1919-1922				1909-1912				1899-1902			
	Married		Single		Married		Single		Married		Single	
	First five years	First ten years	First five years	First ten years	First five years	First ten years	First five years	First ten years	First five years	First ten years	First five years	First ten years
1 occupation												
Number	176	3	572	5	213	71	280	202	70	21	125	109
Per cent	81.9	100.0	79.2	62.5	70.5	61.7	71.6	59.2	82.3	56.7	90.7	81.3
2 occupations												
Number	35	..	130	2	76	30	95	104	14	13	13	22
Per cent	16.3	..	18.0	25.0	25.1	26.0	24.2	30.4	16.5	35.1	9.4	16.4
3 occupations												
Number	3	..	19	..	12	13	14	26	1	3	..	3
Per cent	1.4	..	2.6	..	3.9	11.3	3.5	7.6	1.2	8.1	..	2.2
4 occupations												
Number	1	..	1	1	1	1	2	9	..	..	..	..
Per cent	.5	..	.1	12.5	.3	.8	.5	2.6	..	..	..	..
No. women reporting	215	3	722	8	302	115	391	341	85	37	138	134
Mean number occupations	1.21	..	1.23	..	1.34	1.51	1.33	1.54	1.18	1.51	1.09	1.21
Standard deviation	.50	..	.50	..	.57	.53	.56	.68	.42	.64	.29	.46
Standard error of mean	.03	..	.02	..	.03	.05	.03	.04	.04	.10	.02	.04
1 training field												
Number	183	3	626	6	237	82	321	238	72	25	128	112
Per cent	85.5	100.0	88.0	85.7	80.3	75.2	84.0	72.3	84.7	67.6	94.1	86.8
2 training fields												
Number	27	..	75	1	54	23	58	79	12	10	8	15
Per cent	12.6	..	10.5	14.3	18.3	21.1	15.2	24.0	14.1	27.0	5.9	11.6
3 training fields												
Number	3	..	10	..	4	4	3	12	1	2	..	2
Per cent	1.4	..	1.4	..	1.3	3.7	.8	3.6	1.2	5.3	..	1.5
4 training fields												
Number	1	..	..	..	..	..	..	..	..	..	..	..
Per cent	.5	..	..	..	..	..	..	..	..	..	..	..
No. women reporting	214	3	711	7	295	109	382	329	85	37	136	129
Mean number training fields	1.17	..	1.12	..	1.21	1.29	1.17	1.31	1.17	1.38	1.06	1.15
Standard deviation	.54	..	.37		.49	.53	.51	.64	.41	.58	.22	.40

Another way of estimating the probability that changes in occupations or training fields will occur during the first five years of work rather than later is by determining the percentage of women who, regardless of the number of changes during the first five years, made no additional changes during the second five years. Since these figures do not appear in Table 6, they are given here in detail for the single women of the second and third matriculation periods. Of the women of the third matriculation group who had engaged in one, two, three, or four occupations during the first five years, 72.1 per cent, 73.7 per cent, 71.4 per cent, and 100.0 per cent respectively made no additional change during the second five years. Among the single women of the third period 72.6 per cent made no changes in occupations, and 75.6 per cent made no changes in training fields during the second five years of employment. Of the second matriculation period women engaging in one occupation during the first five years, 87.1 per cent made no change during the second five years; and of those who had engaged in two occupations during the first five years, 84.6 per cent made no change during the second five years. No change in occupations was made by 86.9 per cent of the single women of the second matriculation period and 87.5 per cent made no changes in training fields during the second five years.

These data show that, while the end of the first five years of work does not by any means bring an end to the shifting from one occupation to another, a large percentage of the changes are made during the first five years. Hartson[17] estimated that 553 unmarried alumnae of Oberlin College required on the average 1.4 years to become settled in their final fields of work. It is probable that the average number of years it took these land-grant college women to become settled in their work would run somewhat higher but that the majority of them had done so by the time they had worked five years. If other college women are like these land-grant college women in that they tend to find themselves vocationally during the first five years of employment, a careful follow-up of each graduate for five years after leaving college might well be made part of every college vocational guidance program.

[17]Hartson, *op. cit.*

IV

College Courses and Present Occupations

The final measure of vocational continuity used in this study is the extent to which college courses serve as preparation for the occupations ultimately entered. A detailed study of the relation between college training and the first occupation, between the first and second occupations, between the second and third occupations, and so on was contemplated. That plan was abandoned because it is doubtful whether the material from which the data for this investigation were secured would warrant such minute analysis. A study of that kind, however, would prove valuable, both for the construction of vocational ladders and as a measure of vocational continuity. It would undoubtedly be of interest to those who are responsible for vocational guidance both in and out of schools to know with reasonable accuracy the various channels into which a given kind of training might lead, which channels were likely to end abruptly requiring vocational energy to find new outlets and the points at which such breaks most frequently occur.

This investigation has been confined to a consideration of the relation between undergraduate or graduate majors and the occupations followed at the time of the survey, termed, for brevity, the present occupation.

The interpretation of the individual records to determine whether or not college training had prepared for the work of the present occupation rested, as did the decisions regarding training fields involved in occupations discussed above, on college catalogues, on various books dealing with training for occupations, and on the teaching experience of the writer. In the case of those who received their degrees from some college other than the one in which they originally matriculated or those who for some reason changed majors, whether in the college originally entered or in some other college, all the majors were considered. In so far as there was a definite scheme for the investigation of training fields involved in occupations, the same scheme was used for this investigation of college preparation for the present occupation, with one

exception. In the investigation of training fields, all teaching was assumed to belong to one training field; in this investigation of college preparation, while education was considered preparation for teaching of any kind, subject matter majors were considered preparation only for the teaching of specific subjects. For instance, a history major was considered preparation for teaching history, but not for teaching other high school subjects; a language major, such as Greek, was considered preparation for teaching that language but no other.

The objection may be raised that such an interpretation fails to take account of common elements in closely related fields of learning. Granted that this is true, the fact remains that there has been a slight break in the current of vocational interest and that vocational energy has been wasted when the preparation for the occupation later followed has been indirect. For these reasons the interpretation of preparation for a vocation which is used in this investigation does not seem too strict.

Since a large number of the women studied are teachers, a more detailed consideration of the application of this interpretation to teachers may not be amiss. Lord[18] found that in 1923-1924, 9.0 per cent of 589 Smith College graduates were teaching subjects unrelated to their college majors, with an additional 5.2 per cent teaching subjects other than their majors but related to them. These figures cannot be compared directly with those in the present land-grant college investigation because, in this study, teachers were not separated from those engaged in other occupations for the consideration of the relation between college majors and vocations. It is safe to estimate, though, that at least 14 per cent of the land-grant college women were not teaching their major subjects.

When the undergraduate major had not prepared for the present occupation, a record was made of graduate or advanced work done. That work was listed as giving preparation or no preparation, as the case might be, for the present occupation. Some of the women who failed to take degrees did advanced work of some kind after they left college. Such study was listed as graduate work just as it was for the wo-

[18]Eleanor Louisa Lord, *A Study of Smith College Graduates Engaged in Educational Work.* Northampton, Mass.: Smith College, 1925.

TABLE 7.—NUMBER AND PERCENTAGE OF WOMEN OF THE 1909-1912 AND 1919-1922 MATRICULATION GROUPS WITH SPECIFIED TRAINING FOR PRESENT OCCUPATION DISTRIBUTED ACCORDING TO MARITAL STATUS, EDUCATIONAL HISTORY AND TIME OF VOCATIONAL CHOICE

Matriculation period and distributive classes	Women with specified preparation for present occupation						Total number reporting
	Undergraduate preparation		No undergraduate preparation		No training of any kind		
	Number	Per cent	Number	Per cent	Number	Per cent	
1909-1912. Total	279	55.8	221	44.2	100	20.0	500
Marital status							
Married	65	51.1	62	48.8	29	22.8	127
Single	214	57.3	159	42.0	71	19.0	373
Educational history							
Degree	250	56.9	189	43.1	65	14.8	439
Original college	243	59.5	165	40.4	61	14.9	408
Original field	231	60.6	150	39.3	56	14.7	381
Other field	12	44.4	15	55.5	5	18.5	27
Other college	7	22.5	24	77.4	4	12.9	31
No degree	19	37.2	32	62.7	31	60.7	51
Vocational choice							
Before college	221	57.2	160	41.9	71	18.6	381
During college	47	47.0	53	53.0	25	25.0	100
After graduation	5	55.5	4	44.4	1	11.1	9
After college entrance	57	48.7	60	51.3	29	24.8	117
1919-1922. Total	1625	68.9	733	31.0	456	19.3	2358
Marital status							
Married	262	66.3	133	33.6	103	26.0	395
Single	1363	69.4	600	30.5	353	18.0	1963
Educational history							
Degree	1444	71.9	562	28.0	293	14.6	2006
Original college	1383	72.2	531	27.7	290	15.2	1914
Original field	1212	73.4	439	26.5	242	14.6	1651
Other field	171	65.0	92	34.9	48	18.2	263
Other college	61	66.2	31	33.7	3	3.3	92
No degree	181	51.4	171	48.5	163	46.3	352
Vocational choice							
Before college	1337	73.5	480	26.4	314	17.3	1817
During college	262	55.1	213	44.8	122	25.8	475
After graduation	11	26.8	30	73.1	20	48.8	41
After college entrance	288	53.2	253	46.7	142	26.2	541
Both periods. Total	1904	66.6	954	33.3	556	19.4	2858
Marital status							
Married	327	62.6	195	37.3	132	25.3	522
Single	1577	67.5	759	32.4	424	18.1	2336
Educational history							
Degree	1704	69.5	751	30.4	362	14.7	2455
Original college	1626	70.0	696	29.9	351	15.1	2322
Original field	1443	71.0	589	28.9	298	14.6	2032
Other field	183	63.1	107	36.8	53	18.3	290
Other college	78	55.2	55	44.7	7	5.2	133
No degree	200	49.6	203	50.3	194	48.1	403
Vocational choice							
Before college	1558	70.8	640	29.1	385	17.5	2198
During college	309	53.7	266	46.2	147	25.6	575
After graduation	16	32.0	34	68.0	21	42.0	50
After college entrance	345	52.4	313	47.5	171	26.0	658

men who had degrees. The reason for this lack of distinction between the various kinds of advanced study is that, for the purpose of investigating continuity of vocational interest, the concern is not with academic distinctions between undergraduate and graduate study, but with a distinction between that training which is received as part of the regular undergraduate college experience and that which is secured later, frequently with a very definite vocational purpose. The main interest is in whether or not undergraduate work prepared the individual for her present occupation.

Only the women of the third and fourth matriculation period groups were included in this investigation because they are the only groups large enough to permit satisfactory statistical treatment after the schedules of the women who had no present occupations were discarded. Furthermore, other tabulations made for this study show that the relationships between groups within each matriculation period are sufficiently similar to comparable relationships within other matriculation periods to make compilation of data for each unnecessary.

Tables 7 and 8 show the extent to which there had been preparation, either undergraduate or graduate, for the work of the present occupation. The tables present three sets of figures: the number and percentage of women with undergraduate preparation for the work of their present occupations; the number and percentage having no undergraduate preparation, some of whom, however, did have graduate preparation; and the number and percentage with no preparation of any kind, either undergraduate or advanced.

Nineteen hundred and four women, or 66.6 per cent of the 2858 women of the third and fourth matriculation periods reporting on this point had pursued courses during their undergraduate college years which prepared them for the work they were doing. Of the 954 whose undergraduate work had not been preparation for their present occupations, 398 had received advanced training of some kind for the work in which they were engaged. It might be argued that frequently very valuable vocational training may be secured entirely apart from school situations. That is undoubtedly true, and, as has been pointed out, some of these women probably re-

ceived their training in such ways. There has been, nevertheless, a certain amount of waste effort when the training received in college does not carry over into the period of employment.

In the absence of comparable data from other groups of college women it is impossible to say whether 19.4 per cent of women having had no college preparation, either graduate or undergraduate, and 33.3 per cent having received no undergraduate preparation for the work they are now doing are

TABLE 8.—NUMBER AND PERCENTAGE OF WOMEN OF THE 1909-1912 AND 1919-1922 MATRICULATION GROUPS WITH SPECIFIED PREPARATION FOR PRESENT OCCUPATIONS DISTRIBUTED ACCORDING TO PERSISTENCE IN OCCUPATION ORIGINALLY SELECTED

Matriculation period and occupation	Women with specified preparation for present occupation						Total number reporting
	Undergraduate preparation		No undergraduate preparation		No training of any kind		
	Number	Per cent	Number	Per cent	Number	Per cent	
1909-1912							
Original occupation..	218	73.4	79	26.5	30	10.1	297
Other occupation ...	61	30.0	142	69.9	70	34.4	203
Allied to original..	45	45.4	54	54.5	21	21.2	99
Not allied to original	16	15.3	88	84.6	49	47.1	104
Original and allied occupation	263	66.4	133	33.6	51	12.8	396
1919-1922							
Original occupation..	1328	81.2	306	18.7	154	9.4	1634
Other occupation ...	562	56.8	427	43.1	293	29.6	989
Allied to original..	225	59.0	156	40.9	89	23.3	381
Not allied to original	337	55.4	271	44.5	204	33.5	608
Original and allied occupation	1553	77.0	462	22.9	243	12.0	2015
Both periods							
Original occupation..	1546	80.0	385	19.9	184	9.5	1931
Other occupation ...	574	51.0	551	48.9	311	27.6	1125
Allied to original..	270	56.2	210	43.7	110	22.9	480
Not allied to original	304	47.1	341	52.8	201	31.1	645
Original and allied occupation	1816	75.3	595	24.7	294	12.2	2411

large or small proportions. But, theoretically, a higher degree of coherence between education and vocation would seem desirable.

For a single institution it is worth noting that Ebersbach[19] found among the alumnae of the University of Pittsburgh that 86.4 per cent of the teachers and 36.5 per cent of those in other occupations had received definite training for their work.

Again McCurley's[20] study of the Goucher College class of 1922, shows that 64.8 per cent of the group received direct and 18.9 per cent indirect preparation in college for the work in which they later engaged.

Blake[21] in her *Guidance for College Women* considers this point in detail. Fifty-five women, replying to a questionnaire sent to them several years after they had graduated and when they were presumably settled in their occupations, answered a question regarding the preparation they had received from their college courses for the work they were doing. Fourteen, or 25.4 per cent, answered that their college courses had prepared them for their work, and seven more stated that they had served as general preparation, a total of 36.5 per cent who felt that their college courses had offered some preparation for their work. That would leave 63.5 per cent who stated that college courses had not prepared them for the work in which they later engaged, in contrast to the 33.3 per cent of land-grant college women whose undergraduate majors gave knowledge and skills different from those required by the work in which they were later employed. But it must be noted that the two percentages are not fully comparable because the replies given in the Blake investigation represent subjective judgment on the part of those making them, while the data used in the land-grant college investigation are objective. Furthermore, the number of cases used in the Blake investigation is very small.

Considered in the abstract and in view of the fact that a large number of these land-grant college women had no col-

[19]Ebersbach, *op. cit.*

[20]McCurley, *op. cit.*

[21]Mabelle B. Blake, *Guidance for College Women.* New York: D. Appleton & Co. 1926.

lege work in advance of their undergraduate courses, it would seem that one-third is a rather large proportion to have made no use of undergraduate opportunities for preparation for their present work. Certainly there has been a break in vocational interest at some point since entrance into college, a particularly unfortunate situation in colleges that are largely vocational in purpose.

Table 8 throws interesting light on the data presented in an earlier section on the numbers engaged in the occupation originally selected. Of those who reported their present occupation as the same as that originally chosen 80.0 per cent had received undergraduate training for the work, while only 9.5 per cent had had no college training of any kind for it. Of those in an allied field of work, 56.2 per cent had had undergraduate preparation and 22.9 per cent no college preparation for that work. On the other hand, of those doing work which is not allied to the occupation originally selected, only 47.1 per cent had had undergraduate preparation for the work, and 31.1 per cent had had no preparation of any kind for it. Clearly there is a positive relationship between continued employment in the work originally selected and college preparation for it.

There is a marked difference in vocationed continuity between the women who at the time of the survey were engaged in the work originally selected and those who were engaged in an entirely different occupation. Eighty per cent of the first group had made a vocational choice, in most cases either before or during their college years, selected a major field of study which would prepare for the occupation chosen, and ultimately entered that occupation. It is possible, of course, that a selection of a major course of study was made before any definite vocational decision had been reached and that the occupational choice grew out of interest in the work being done in college. In either case there was very evident persistence of vocational interest. It is noteworthy that in this group of women whose present occupation was the same as that originally selected over half of those who had not had undergraduate training for it had taken some preparatory graduate work. In contrast to this 80.0 per cent with undergraduate and 10.0 per cent with graduate training, 52.8 per cent of

the women who at the time of the survey were engaged in entirely different work from that first selected had received no undergraduate preparation, and 31.1 per cent of them no college training of any kind for their present occupation.

Thus there is evidence of much less continuity of vocational interest reaching from college days into the period of active wage earning among the women who had changed their occupation, who were not in that originally selected or in one closely allied to it, than among those who reported their present occupation the same as the work originally selected. Percentage differences between the proportion of those in the original occupation and in one not allied to it of 32.9±2.16 with no undergraduate preparation and of 21.6±1.94 with no training of any kind are clearly significant. The need for more educational and vocational guidance of college students is being recognized and the techniques of guidance work have been greatly refined since 1922. It is only through an efficient system of guidance in high schools and in colleges that such waste effort as that made evident by the data presented in this chapter can be eliminated.

V

The Age Factor

The phases of personal history which are available for study are age, as it is roughly indicated by the time of matriculation in college, and marital status. Consideration will be given in this chapter to differences in vocational continuity among the women of the four matriculation periods.

In a general way the time of matriculation in college is roughly indicative of age, as it is of the general social and philosophic background of educational and vocational experience. A small number of the women of this study entered college after a period of wage earning and so were older and had been employed for a longer time than had most of the women of their group. This may affect very slightly the figures secured by the application of the various criteria but their number is so small as to make separate consideration of them quite unnecessary.

Gainful Employment

Reference to figures in Table 1 shows a steady decrease from the first through the fourth matriculation periods in percentages of women who have never had paid work. Thirty-three and three-tenths per cent of the women in the first, 28.3 per cent of those in the second, 21.9 per cent of those in the third, and 15.5 per cent of those in the fourth matriculation period group had never held remunerative positions. With the exception of the difference between the first and second periods, the differences in percentages are statistically significant. The married and single women considered separately show a similar decline in those who have never worked for a living from the first through the later matriculation periods. If the return of questionnaires was at all influenced by a selective factor, the percentage of women in the earlier matriculation groups who had never been gainfully employed is probably disproportionately small, since it is likely that a larger number of those employed than of those not employed received schedules and would be interested in the survey. The evi-

dence, of course, simply follows the findings of other investigators and of common observation, that women are entering gainful employment in ever increasing numbers.

Persistence in Occupation Originally Selected

While it is possible that a few of the answers from which the figures in Table 2 were derived may have been rationalizations, the data are probably sufficiently free from subjectivity to be worthy of serious consideration. In so far as this comparison of the present occupation with the occupation originally selected is indicative of facts, it is a good criterion for measuring continuity of vocational interests.

Here again there is a difference over a 10 year period which may indicate a growing tendency on the part of women to regard their wage earning seriously and to take a long-time view of their vocational problems. Sixty-six and seven tenths per cent of the women of the fourth, and 57.4 per cent of the women of the third matriculation period reported that they were engaged in the occupations which they had originally selected, a difference of 9.3 ± 2.9.

The percentage of women employed in the occupation originally selected and in closely allied occupations combined was greater in the 1919-1922 than in the 1909-1912 matriculation group.

The smaller proportion of the third matriculation group engaged in the kind of work originally selected and in work closely allied to it may be due to the changes brought about by the war and to the increased opportunity and necessity for change of occupation open to these women by virtue of the fact that they have been longer out of college than have those of the fourth group. It is also likely to be due to more careful vocational thinking on the part of the women who entered college during the later period. If the latter explanation is correct, a more continuous vocational interest on the part of the women of the later matriculation groups than of those of the earlier should be indicated by the other criteria applied.

Vocational Stability

NUMBER OF YEARS TO A POSITION

Although fewer of the women of the earlier than of the later matriculation periods entered gainful employment, those of the earlier periods who did so showed a tendency to stay longer in their positions than did the women of the more recent periods. The mean and median number of years to a position for the women in each successive period was significantly higher in every case except that of the first and second matriculation groups. (See Table 3) The lack of significance of difference between the women of those groups, 1889-1892 and 1899-1902, may be due simply to the small number of cases, although the actual difference is smaller than the differences between any other two successive decades.

When the matriculation periods are compared according to the percentage of women reaching various levels of average number of years to a position, a similar tendency for those in the earlier decades to have on the average a higher number of years to a position appears. Table 3 shows the increase in percentages from the most recent to the earliest matriculation period at both the two-year and the five-year levels. While the factor of the greater possible number of years of employment for the women of the earlier periods may have been operative to a small extent in producing the differences in percentages of women who had reached various average-levels of time spent in one position, the difference cannot be fully explained in that way. Although the very high average number of years spent in one position by a few women would raise the means, it should not materially affect the percentages who have remained in one position for either two or five years. It would seem, then, from the figures at hand that the women of the earlier periods tended to remain longer in one position than did the women of the later periods regardless of differences in possible length of time of employment.

This may have been due to the stronger vocational interest on the part of those women of the earlier matriculation groups who did go into gainful employment. It may just as well have been due to a relative lack of vocational interest, an acceptance of a job as merely a job, with no consideration

of the part that job might play in the vocational history of a life time. A more likely explanation may lie also in the fact that in earlier years occupational opportunities for women were not so plentiful as they have been in more recent years, and that therefore when a woman entered a position, there was less opportunity, as well as less incentive, for her to leave it.

Number and Nature of Changes in Occupation

Because the women of the third matriculation group whose occupational changes were investigated had been employed at least 10 years, while those of the fourth might have been employed for as short a time as two years, a comparison of the percentages of the women of the two groups who had engaged in only one occupation during the full period of their employment would have no significance.

When the vocational continuity of the women of the second, third, and fourth matriculation periods is measured by the number of occupations entered during the first five years and the first 10 years of employment and by the number of training fields involved in those occupations, the factor of length of time of employment is held constant. Under these conditions any differences between the women of the various decades which appear assume significance.

Table 6 gives figures which indicate that the women of the third period made more changes in occupations and in training fields than did the women of either the second or the fourth. Since none of the other criteria used in this investigation indicates any constant difference between the women who matriculated in 1909-1912 and those who matriculated in 1899-1902 and in 1919-1922 this factor of greater occupational change was no doubt due to the entrance of those 1909-1912 women into the economic field at a time of rapid change, especially in women's work, due to the Great War. The smaller proportion of these 1909-1912 women who remained five years in a position than of the 1919-1922 women who remained three years points in the same direction.

College Courses and the Present Occupation

Table 7 shows that 68.9 per cent of the women matriculating in 1919-1922 and 55.8 per cent of those matriculating in 1909-1912 had received undergraduate training for the work of the present occupation, a difference of 13.1±3.1. The difference may be due to one of two facts. In the first place, colleges offered a slightly enriched curriculum to the women who matriculated in 1919-1922 as compared with the curriculum offered to the women who matriculated in 1909-1912. In the second place, as noted above, new occupations were opening to women at the time the third matriculation period group was leaving college. The women of this group may have taken advantage of some of these opportunities even though they had not received special training for the occupations during their undergraduate college years.

Further, it is possible that the difference in percentages of those of the two periods who had undergraduate training for the work of their present occupations is due, in addition to the enriched curriculum, to more interest on the part of the colleges in knowing something of occupational opportunities for women and to more and better sources of vocational information available to college women.

Summary

When gainful employment, persistence in the occupation originally selected, and choice of college majors which prepared for vocations ultimately entered are used as criteria, the women of the later matriculation periods appear to have more pronounced vocational continuity than do the women of the earlier decades. When the average number of years to a position is used as a criterion, the women of each decade show a decrease in vocational continuity from the women of the decade just preceding. When the measurement is made in terms of the number and nature of occupations engaged in during the first five and the first 10 years of employment, both the fourth and the second matriculation period women show greater continuity than do the women of the third period, a finding for which war conditions perhaps offer an

explanation. Assuming that the reasoning regarding the longer time spent in a position by the women of the earlier decades is sound and that the other three criteria have been valid, we must conclude that these land-grant college women showed an increase in vocational continuity with each later matriculation period group.

V 1

Marriage as a Factor

Gainful Employment

As might be expected, a much larger percentage of married than of single women had never been gainfully employed. Table 1 shows the numbers and percentages in each matriculation group and in all four combined who had never held remunerative positions. Thirty-two and four tenths per cent of the married women and 2.4 per cent of the single women in all four groups had never worked for a living. A proportional difference is found in each of the four periods taken separately. The large differences between the percentages of married and single women who had never been gainfully employed probably indicate that a fairly large number of women who married either did so immediately after leaving college or so soon thereafter that they did not consider it worth while to seek or accept positions. It is difficult to judge whether the fact that they expected to marry soon kept them from seeking positions or the fact that they had no position led them to marry early. It is not difficult to decide, however, that even as late as 1922, marriage tended strongly to prevent gainful employment.

Persistence in Occupation Originally Selected

Table 2 shows that 67.5 per cent of the single women, in contrast to 55.2 per cent of the married women, of the 1909-1912 and 1919-1922 matriculation groups were engaged at the time of the survey in the occupation originally selected. The figures probably indicate fairly accurately the extent to which marriage breaks into continuity of vocational experience. The married woman who goes into or continues gainful employment after marriage must accept such employment as fits into her home-making schedule or into the geographical location of her husband, possibly both. She is not quite as free as is the unmarried woman to seek occupation according to her interests, even though the unmarried wage earning

woman, either from necessity or choice, frequently selects her place of employment so that she may remain with or near her parents. For example, Ebersbach notes that among the married alumnae of the University of Pittsburgh still at work, 15.3 per cent were in work different from that carried on before marriage.[22]

Although the percentage of married women engaged in the occupation originally selected is smaller than that of single women, 23.5 per cent of the married women and only 15.7 per cent of the single women were employed in occupations allied to those originally selected, suggesting more strongly that it is probably partly necessity, and not entirely lack of interest which causes married women to leave the occupations of their original choice. The data seem to indicate that married women who find themselves in situations which make it impossible for them to continue the work originally selected do not entirely lose their first vocational interest, but seek new work as nearly like the former as possible.

When the numbers in the occupations originally chosen are combined with the numbers in allied occupations, we find that 78.7 per cent of the married women and 83.3 per cent of the single women have, to a greater or less degree, continued in their original interests. The difference between the two percentages, 4.6 per cent, is still, however, statistically significant and indicates less vocational continuity among married women than among single women.

Vocational Stability

NUMBER OF YEARS TO A POSITION

The data in Table 3 show that the average number of years to a position is significantly higher for single women than for married women. For the total number of married women in the four matriculation periods the mean number of years to a position is 2.30 and the median, 1.98; while for the single women the mean is 3.02 and the median, 2.47.

A reason for these differences which readily suggests itself is the fact that for a large proportion of married women occupational history is cut short by marriage, thus making

[22]Ebersbach, *op. cit.*

impossible any large average number of years to a position. In an attempt to offset this situation of the married women, a new distribution of averages was constructed, including only those women, married and single, who were employed at the time of filling out the schedule. It was felt that such employment would indicate fairly accurately a continuous occupational history and would therefore put the married and the single women approximately on a par in regard to the possible average number of years to a position. Table 9 shows the means, medians, and standard deviations computed from this new distribution. While the two groups, married and single, are brought a little closer together by the new distribution, the single women still show a higher average number of years spent in one position than do the married women.

Measured by the percentage of women reaching the various levels of average number of years to a position, the single women rank higher in each matriculation period than do the married women. (See Table 3) In the 1899-1902 matriculation period, the first one in which separate figures are given for various groups, 99.2 per cent of the single women and 82.4 per cent of the married women spent on the average two years or more in a position. In the third matriculation period, 1909-1912, 94.4 per cent of the single women and 67.2 per cent of the married women, and in the fourth period 62.1 per cent of the single women and 47.7 per cent of the married women reached the average of two years or more to a position. Fifty-eight and six tenths per cent of the single women and 23.2 per cent of the married women of the second period and 25.5 per cent of the single women and 12.0 per cent of the married women of the third averaged five years or more to a position. In the fourth matriculation period, 1919-1922, 33.1 per cent of the single women, as contrasted with 21.0 per cent of the married women, reached the average of three years to a position. Thus at all the average-levels and for all the time groups the differences in percentages are large and statistically significant.

With this particular method of measurement, the question of whether or not a woman has had a continuous occupational history makes relatively little difference. These data on per-

centages of women engaged in one position for a given average number of years clearly substantiate any conclusions which may be drawn from a comparison of the means and medians given in Tables 3 and 9.

TABLE 9.—AVERAGE NUMBER OF YEARS TO A POSITION REPORTED BY 3015 WOMEN OF THE 1909-1912 AND 1919-1922 MATRICULATION PERIOD GROUPS DISTRIBUTED ACCORDING TO MARITAL STATUS

Matriculation group and marital status	Number of women	Average number of years to a position				
		Standard deviation	Mean	Standard error mean	Median	Standard error median
1909-1912						
Married ...	133	2.43	3.31	.21	2.73	.26
Single	383	2.62	4.14	.13	3.31	.16
1919-1922						
Married ...	445	1.30	2.28	.06	2.05	.07
Single	2054	1.27	2.66	.03	2.34	.03

Only one conclusion is possible, that the single women clearly tend to remain in one position longer than do the married women. Since we have no data on time of marriage in relation to graduation from college or to the vocational history, definite conclusions regarding the reasons for this tendency of married women to change jobs relatively frequently cannot be drawn. It is possible that the conditions under which married women must select their employment force greater vocational instability upon them than upon single women, or that, as Ebersbach[23] suggests, even after the conditions under which married women must select their work are discounted, women who marry are inherently more unstable vocationally than women who remain single. At present there are no authoritative studies which offer conclusive evidence on this point or on the causal relation which exists—if it does exist—between marriage and vocational instability. Is it due to the attitude of the women themselves, to their environment or to social tradition which surrounds them with certain vocational prejudice and limitations?

[23]Ebersbach, *op. cit.*

Number and Nature of Changes in Occupation

In both the third and fourth matriculation period groups a higher percentage of married than of single women have engaged in only one occupation. (See Table 4) In the third matriculation period, 1909-1912, 58.3 per cent of the married women and 55.8 per cent of the single women had made no change in their occupations, and in the fourth period, 1919-1922, 82.9 per cent of the married women and 79.1 per cent of the single women had likewise made no change. The difference, while not great in either case, and statistically significant only for the fourth period group, in both cases shows fewer changes by married women. This may be due partly to the fact that those women who knew that they were to be married within a short time did not take the trouble to make an occupational change which the single women looking forward to a longer period of employment considered it worth while to make for the sake of advancement or satisfaction in their work. It is possible also that the married women had a shorter total term of gainful employment than did the single women and so would have had less opportunity to change occupations. Whatever may be the reason, it appears that the married women were a little more likely than the single women to avoid changes in occupation.

Turning from a consideration of the percentage of women engaged in one occupation to a consideration of the mean number of occupations engaged in, it is found that the average number of occupations engaged in by the married women of the third matriculation period group, 1.59±.07, is very slightly higher than the average number, 1.53±.04, engaged in by the single women of that group. Among the fourth matriculation period women, however, the relationship is reversed, the married women averaging a slightly lower number of occupations, 1.19±.01, than the single women, 1.22±.01.

The married women of the third matriculation period entered an average of 1.35±.06 training fields, those of the fourth an average of 1.14±.01, while the single women of the third and fourth periods entered 1.33±.57 and 1.14±.01 training fields respectively. But the decrease in the number of training fields compared with the number of occupations

is greater for the single than for the married women, showing that the changes made by the single women were likely to be less sharp than those made by the married women.

When the length of time of employment is held constant by computing the number of changes made during the first five and the first 10 years of wage earning, the data become less consistent. (See Table 6) The one statistically significant difference is that between the mean number of occupations engaged in by the married and the single women of the second matriculation period. Since this difference shows fewer occupations engaged in by the single women, it seems necessary, if any conclusion is to be drawn, to decide that the single women were slightly less likely than the married women to make changes in their occupations over a long period of time.

The percentages of women remaining for five or for 10 years in occupations which involve only one training field strengthen this conclusion. At every point of comparison, except the first 10 years of employment of the third and fourth matriculation period groups, a higher percentage of single than of married women have continued within one training field background. With one exception the average number of training fields involved in the occupations engaged in for five years and for 10 years is higher for the married women than for the single women. Although only one of these differences is statistically significant, it becomes clear when the length of employment is held constant that the single women were much less likely than the married ones to make changes in occupations which involved new backgrounds of training.

Summing up the evidence on the relative vocational stability of the married and single women, it is evident that while the married women made fewer changes from one occupation to another than did the single women, such changes as they did make were more likely to require new training backgrounds. Also when the time of employment is held constant, the single women were a little less likely to enter new occupations and less likely to enter new training fields than were the married women. The single women had a

significantly higher average number of years to a position than did the married women. While the data on relative vocational stability are slightly conflicting, the weight of evidence seems to point to the conclusion that the married women of this group were less stable vocationally than were the single women.

College Courses and Present Occupation

Table 7 shows that in both the third and the fourth matriculation periods the percentage of married women who had had undergraduate training for the work of the present occupation was smaller than the percentage of single women who had had such preparation. The percentage of married women who had had no training of any kind, graduate or undergraduate, for their present occupations was larger than the percentage of single women in the same group. These differences strengthen the conclusion arrived at in the chapter dealing with persistence in the occupation originally chosen, namely, that marriage does unquestionably break into vocational continuity even when it does not end the history of gainful employment.

Summary

Measured by all the criteria used in this study, the vocational histories of married women are less continuous than are the vocational histories of single women. There are three possible explanations. Certain interests peculiar to marriage and homemaking may be stronger than are the vocational interests of married women. Women who marry may as a group be less persistent in vocational interest than women who remain single. The vocational interest may be equally strong in married and single women but find more difficulty of expression in the case of married women because of their necessity of selecting positions and frequently occupations that will fit in with the needs and desires of husbands and families. While the data presented in this investigation do not point conclusively to one of these explanations as more satisfactory than the others, the first and third explanations seem the more reasonable.

VII

Vocational Continuity and Educational History

Interesting and valuable as data on differences in vocational continuity between women of four different decades or between married and single women may be, data bearing on differences in vocational continuity which exist between groups having different educational and vocational histories are of more immediate practical value for vocational and educational counseling. The factors in the educational histories of the group of land-grant college women are discussed in this chapter.

Educational history will be considered first, from the standpoint of continuity of educational experience; second, from the standpoint of the major field of undergraduate study.

For the consideration of continuity of educational history the cases were divided into two main groups, the women with degrees and those without degrees. Included in the degree group are those women who received, instead of the regular bachelor's degree, a standardized, accredited certificate at the completion of a certain unit of college training or other training which within a given field might be considered the equivalent of college training. The most common of such certificates are normal diploma, teacher's certificate, registered nurse's certificate. The number of women holding such certificates was very small. It seemed wise to include them in the degree group because the aim of this investigation in distinguishing between the degree and the non-degree groups was to distinguish between those who had carried a certain course of training to a point of completion and those who had stopped their training before such a point was reached.

Those who had degrees were divided into two groups according to whether the degree was taken in the college in which the individual first matriculated or in some other college. These two groups are listed in the tables as subdivisions of the degree group under the headings *original college* and *other college.* The women who took their degrees in the original college were in turn divided according to whether

they completed their work in the major field of study in which they originally matriculated or changed to some other field. They will be referred to as having taken their degrees in the *original college, original field,* and in the *original college, other field.*

For the investigation of vocational continuity in its relation to the major fields of study in which the individual first matriculated, the following classification of seventeen major fields of study was prepared. This classification covers the majors listed jointly by the colleges and the individuals filling in schedules. It was based on a consideration of subject matter involved rather than of college departments or schools.

1. Agriculture
2. Architecture
3. Commerce and business
4. Education
5. Engineering
6. Home economics
7. Journalism
8. Language and literature—including English
9. Mathematics
10. Music, fine arts, public speaking and dramatics
11. Science — natural, physical, chemical — including pharmacy
12. Social science—including history, economics, and Americanization
13. Personnel work
14. Psychology and pre-psychiatry
15. Pre-medical and nursing
16. Physical education
17. Others

Education is sometimes coupled with another major, such as English, French, history, mathematics, or the like, which will serve as the training in the subject matter which is to be taught in college, high school, or departmentalized elementary school. When the two were listed as co-majors, the subject matter major was the one recorded. As far as possible, education was noted only when it was a single major or when it was used as training for teaching courses in education, for teaching or supervising in elementary schools, for critic teacher work, or other similar teaching activities. This seemed a logical interpretation in view of the fact that the list of

major fields of study was to be used in connection with an investigation of the number of occupations engaged in and the number of training fields involved in those occupations. As a matter of fact, education was listed so seldom as a major that the inclusion or exclusion of those cases referred to would have made practically no statistical difference.

Psychiatry, which was listed rarely, was coupled with psychology rather than with medicine because, in spite of the fact that medical training is generally recognized as a very desirable background of training for psychiatry, its subject matter in undergraduate courses is more closely connected with psychology than with pre-medical work.

Gainful Employment

In the second, third and fourth matriculation period groups significantly larger percentages of women without degrees than of those with degrees had never held remunerative positions. Thirty-five and nine tenths per cent of the non-degree women and 12.5 per cent of the degree women of the four periods combined had never been gainfully employed. Details for separate groups are listed in Table 1.

There is no doubt that the women who did not have degrees were much less likely to enter gainful employment than were those who did have them. Possibly the same lack of persistence which led the woman to drop her college work before it was finished accounts for lack of sufficient vocational interest to lead to the seeking of a position in those cases where economic pressure was not so great as to force the earning of a living. It is possible too that the women without degrees found it more difficult to enter the kind of positions which their college experience might lead them to desire than did the women who had degrees. Still another explanation is that the lack of strong vocational interest may have been partly responsible for the dropping out of college before the work was completed.

Apparently it made no difference in probability of gainful employment whether the degree was taken in the college originally entered or in some other college, since among the third matriculation period women those who received degrees

from the original college, and, among the fourth matriculation period women, those who received them from other colleges had the slightly higher percentage of their numbers never gainfully employed. Likewise, continuity within a major field of study seemingly had no correlation with probability of entering gainful employment. Fewer of the women of the third matriculation period who remained within the major fields of study in which they matriculated than of those who changed majors entered paid work. The reverse was true of the fourth period group. If the change in majors is coupled with a vocational consciousness which is likely to lead to employment of some kind after graduation, it should consistently indicate greater vocational continuity when other criteria are applied.

Persistence in the Occupation Originally Selected

When the persistence of women with degrees in the occupations originally chosen is compared with the persistence of women without degrees, relationships similar to those found when lack of gainful employment was used as the measure of vocational continuity appear. (See Table 2) In both the third and fourth matriculation periods a higher percentage of women with degrees than of those without were employed in the occupation originally selected. While the difference in percentages is not statistically significant for the women of the third period, it is significant for those of the fourth and for those of both periods combined.

The difference in persistence in the occupation originally selected between the women with relatively continuous educational histories and those whose continuity of educational experience was broken by changes from one college to another or by changes in majors might have been due to chance and so must be discounted in any consideration of vocational continuity. In spite of this fact, it may not be amiss to point out that the women with degrees in the original major and those who remained in the original college had a higher percentage doing the work originally chosen than did those who had changed either colleges or majors.

Vocational Stability

NUMBER OF YEARS TO A POSITION

The differences in the average number of years to a position between the women who made no changes during their educational careers and those who changed colleges or majors are neither significant nor consistent.

On the contrary the differences between the women with degrees and those without degrees are pronounced and take a direction contrary to that which would probably be expected. As may be seen in Table 3 those without degrees in the third and fourth matriculation groups remained on the average a longer time in one position than did those with degrees. This is true whether measured in terms of mean and median number of years to a position or of the percentages of the various groups who reached the two, three, or five year average-level. Practically all these differences must be attributed to factors other than chance. However, among the second matriculation period women the situation is reversed.

It may be argued for the women of the fourth matriculation period that, whereas those who took degrees and therefore had been out of college only a short time were still in that initial period of shifting from position to position which it is generally assumed is peculiar to early years of employment, those who left college without degrees had worked long enough to have passed to a large extent through the period of adjustment into a period of greater stability and therefore might be expected to have higher averages of years to a position. Even though this argument may hold for the fourth matriculation period women, it is not valid when applied to the women of the third group. Clearly the women without degrees remained in one position longer than did the women who had degrees. This may be because, being less highly trained, their services in the kinds of occupations which college women tend to enter are less in demand than the services of women who have degrees and thus they would have less opportunity than the women with degrees to go into new positions in an attempt at vocational advancement. The situation among the women of the earlier matriculation groups would strengthen this argument as the degree was less usual

and less often expected at the time they entered employment, so that those without degrees were at a relatively smaller disadvantage than they would be among more recent graduates.

Number and Nature of Changes in Occupations

Tabulations made preliminary to constructing Tables 4 and 5 revealed the fact that there was much similarity in the records of the women who had changed from one college to another and those who had changed from one major field of study to another. For that reason the women with degrees are divided in these tables into two groups instead of the three that have been used in other tables. The two groups are (1) those who had made no educational change, who received degrees from the college and in the majors in which they originally matriculated, (2) those who had made some change in the course of their educational histories, either a change in college or a change from one major to another.

Again, no definite indication of a positive relationship between continuity of educational experience and vocational continuity is found. The evidence is contradictory and most of the differences between groups may be attributed to chance as easily as to any other factor.

When the differences between the women with degrees and those without are considered more definite evidence appears. Among the fourth matriculation period women, 81.5 per cent of those with degrees and 75.5 per cent of those without degrees remained in one occupation. In the same group, 89.2 per cent of the women with degrees, in contrast to 78.8 per cent of those without degrees remained within one training field. Both differences of percentages are statistically significant. The average number of occupations ($1.65 \pm .01$) and the average number of training fields ($1.62 \pm .01$) entered by the women without degrees is also significantly higher than the average number of occupations ($1.60 \pm .00$) and training fields ($1.56 \pm .00$) engaged in by the women with degrees.

In the third matriculation period group the same relationship obtains, but with smaller differences. That is, the women with degrees made fewer changes in occupations or in train-

ing fields than did the women without degrees, those with degrees averaging 1.57±.03 occupations and 1.31±.03 training fields while those without degrees reported 1.58±.10 occupations and 1.46±.10 training fields.

Summary

Thus the data on the relative vocational stability of the women who made some shift in the course of their educational histories and those who did not make such a shift are conflicting. However, as between those with and without degrees the situation is more clear cut. The women without degrees showed distinctly higher vocational stability than did those with degrees when measured by the average number of years to a position but the reverse relationship holds when the measure used is the number of occupations or training fields involved. Apparently the women without degrees shifted about in an endeavor to locate in a suitable field of work.

It is probable that the number of occupations engaged in, and, more particularly, the number of training fields involved in those occupations, is a more valid measure of vocational continuity than is the average number of years to a position. A person may shift positions frequently during the earlier years of vocational history for the express purpose of climbing vocationally. Shifts in occupations are somewhat less likely to serve the same purpose and certainly indicate a more or less definite break in continuity of vocational interest while shifts into occupations which require an entirely new background of training indicate a sharp break in vocational interest.

College Courses and Present Occupations

The first measure which brought out rather consistent and at least partially significant differences between those women who made some educational change and those who made no such change is the relation between college majors and the present occupation. In both matriculation period groups and also among the women of the third and fourth groups combined, those who received degrees from the original college more frequently prepared during their college years for their present occupations than did those who received degrees from

some other college. (See Table 7) The differences in percentages are significant for the women of the third and for those of the combined matriculation periods, but not for those of the fourth. Likewise, in both periods the women who had not changed majors were more likely than those who had changed to enter ultimately into occupations for which those majors had given preparation. Only part of these differences in percentages can be considered significant.

The evidence, while not very strong, seems to indicate that the women who had made a shift in their educational histories are less likely than those who did not make such a shift to have a persistent vocational interest as indicated by carry-over of college preparation into the work which they did after leaving college.

One might suppose that the change in majors or in colleges would frequently accompany a vocational decision and that consequently those who had made such changes would thereafter have a higher degree of continuity of vocational interest. There is some evidence to the contrary that the break in continuity of educational history indicates a lack of decision which led later to changes in occupation or to choice of occupations for which preparation had not been made.

A consideration of the differences between the women with degrees and those without degrees shows that in both the third and the fourth matriculation periods, as well as in the two combined, a significantly higher percentage of women with degrees than of those without degrees had a record of undergraduate preparation for their present occupations. Furthermore, among the women who had no undergraduate preparation, a much larger percentage of those with degrees than of those without degrees had received graduate preparation for the work which they later entered. There is no doubt that, in so far as college preparation for present occupations is an adequate measure, the degree women of this land-grant college group showed a much more persistent vocational interest than did the non-degree women.

Summary

On the basis of evidence presented in this section the conclusion seems to be justified that the women who received degrees showed greater continuity of vocational interest than did the women who had not received degrees. This conclusion is based on the following evidence:

(1) Women with degrees were much more likely to enter gainful employment and to find their way, after a time at least, into the occupations they selected at the time of making a definite vocational choice.

(2) They were more likely to remain in one occupation and in occupations involving one training field during the whole period of their gainful employment.

(3) The average number of occupations in which they engaged and the average number of training fields involved in those occupations was significantly lower for the women who had degrees.

(4) Their college major fields of study more frequently prepared them for their present occupations.

Only in the average number of years to a position is there found a reverse relationship, the women without degrees remaining on the average longer in one position than did those with degrees. And it must be remembered, as has been suggested, that this more frequent changing of positions by those with degrees probably indicates the seizing of greater opportunities for advancement.

The data on differences in vocational continuity between women who had made some change in their colleges or their majors and those who had made no such change does not warrant the drawing of final conclusions. The one measure which gave fairly consistent results indicates that possibly the women who had no breaks in their educational histories showed slightly more continuity of vocational interest than did those who had made educational changes. There is a little evidence that there is a positive relationship between continuity in educational experience and continuity in vocational experience and interest, but this evidence is not strong enough to serve as the basis of positive conclusions.

Major Fields of Undergraduate Study

In this section the relationship between college majors and vocational continuity as indicated by the number of occupations and the number of training fields entered is the question at issue.

The classification of major fields of undergraduate study as well as the reasons for the choice of classification was discussed at the beginning of this section. Tabulation of the numbers and percentages of women who matriculated in the various undergraduate majors and of the number of occupations in which they were engaged and the number of training fields involved in those occupations was made for married and for single women of the third and fourth matriculation groups.

In the construction of Table 10 two separate listings were made. First the majors were ranked according to the total number of women who had matriculated in each. Because the numbers of matriculants in the various majors which fell at the lower end of the scale were very small, only the eight majors involving the largest number of cases were included in the final tabulation. No major reported by the third matriculation period women failed to be reported in the fourth period group and those majors reported so frequently as to appear in the upper half of the tabulation for the third period also appeared in the upper half of the fourth period listing.

For Table 10 the majors were ranked according to the percentages of matriculants in each major who had engaged in only one occupation and in occupations involving only one training field, the major with the highest percentage ranking one.

Women Engaged in One Occupation and in One Training Field

Ranked from one to eight as in Table 10 according to the percentage of women engaged in only one occupation, in the 1919-1922 group the majors ranking four or above are *language and literature, commerce, education* (present for married women only), and *mathematics* (present for single women only); those ranking five or below are *music and art,*

TABLE 10.—RANK OF MAJOR FIELDS OF UNDERGRADUATE STUDY ACCORDING TO PERCENTAGE OF WOMEN IN THE 1919-1922 AND 1909-1912 MATRICULATION GROUPS MATRICULATED IN EACH MAJOR ENGAGING IN ONLY ONE OCCUPATION AND IN OCCUPATIONS INVOLVING ONLY ONE TRAINING FIELD

Major	Rank of major according to percentage of women matriculated in it in one occupation or one training field											
	1919-1922 a						1909-1912 b					
	Married			Single			Married			Single		
	Number[1]	Per cent	Rank of major	Number[1]	Per cent	Rank of major	Number[1]	Per cent	Rank of major	Number[1]	Per cent	Rank of major
One occupation												
Commerce	44	84.1	4	76	79.0	4	..	..	..	..	..	..
Education	18	94.4	1	..	..	..	3	33.3	8	4	100.0	1
Home economics	471	85.4	3	819	77.7	5	48	52.1	4	137	47.6	6
Language and literature	193	88.5	2	429	82.3	2	30	66.6	1	97	70.1	3
Mathematics	..	..	..	66	95.4	1	2	50.0	5	21	47.6	5
Music and art	45	73.3	8	54	75.9	8	2	50.0	5	7	71.4	2
Natural science	50	74.0	7	130	76.9	7	11	63.6	3	22	42.3	8
Social science	103	75.7	6	224	77.6	6	4	50.0	5	20	45.0	7
Two or more majors	37	78.4	5	75	80.3	3	9	64.4	2	30	50.0	4
One training field												
Commerce	43	88.4	4	75	86.7	3	..	..	..	..	..	..
Education	18	94.4	1	..	..	..	3	33.3	8	4	100.0	1
Home economics	468	93.0	2	805	91.3	2	44	81.8	1	131	77.1	2
Language and literature	193	89.1	3	429	84.6	5	30	70.0	2	90	71.5	3
Mathematics	..	..	..	65	93.8	1	2	50.0	6	21	47.6	8
Music and art	45	77.8	7	54	83.3	7	2	50.0	6	7	71.4	5
Natural science	49	79.6	6	127	84.3	6	10	70.0	2	20	50.0	7
Social science	103	77.7	8	221	80.5	8	3	66.6	4	20	55.0	6
Two or more majors	36	81.1	5	74	86.5	4	9	64.4	5	28	71.5	4

a. Only those gainfully employed two years or more were included in tabulation
b. Only those gainfully employed ten years or more were included in tabulation
[1]Total number who matriculated in major

natural science, social science. When the findings for the 1919-1922 and 1909-1912 matriculation groups are combined, *language and literature* always and *two or more majors* three times out of four rank four or above and *social science, music and art* and *natural science* rank five or below three times out of four.

Thus in both matriculation period groups a larger percentage of those women who majored in language and literature than in any other field remained in one occupation, while distinctly smaller percentages of those who majored in music and art, in natural science and especially in social science did so. Details for married and single women listed separately may be found by reference to Table 10. The higher ranking of home economics among the married women should be noted.

When the ranking is according to the percentage of women who made no change in training fields, the majors assume a somewhat similar order. In the 1919-1922 matriculation group, *commerce, home economics, education* (present for married women only), and *mathematics* (present for single women only) rank four or above; and *natural science, music and art,* and *social science* rank five or below. In the combined 1919-1922 and 1909-1912 matriculation groups, *home economics* and *language and literature* rank in the upper half of the scale three times out of four; and *music and art, natural science,* and *social science* rank in the lower half three times out of four.

Home economics ranks high throughout, and *language and literature* ranks high in the third matriculation group; *social science* continues consistently low in the percentage of women who remained within one training field even as it was when measured by the percentage of women remaining in one occupation. *Home economics* it will be noticed has made a decided shift, from a medium or low rank when measured by the percentage of women engaged in one occupation to a consistently high rank — first, three times, and second, three times out of a possible six — when measured by the percentage of women who remained within one training field.

The ranks of the various majors when measured by average number of occupations and training fields is almost identical with their ranks when measured by the percentage

of women remaining in one occupation and one training field. There is no need, therefore, for discussing them in detail. The relative occupational continuity of the women matriculating in the various majors remained practically the same regardless of the number of occupations engaged in or the number of training fields involved in those occupations.

Summary

According, then, to the situation in this land-grant college group, women who are most likely to remain in one occupation were those who in undergraduate days matriculated in language and literature. The women who majored in home economics tended to fall below the average in their likelihood of remaining in one occupation. But they had the best chance of remaining within the bounds of only one training field. The women who majored in the social sciences were least likely to have continuity of occupational experience. They made frequent shifts in occupations and went into occupations involving new training fields. Likewise those who majored in the natural sciences and in music and art were almost as likely to make frequent changes in occupations and in training fields.

The language and literature majors probably owe their high degree of continuity of vocational experience to the fact that many of them go into teaching. Teachers are more likely to remain in one occupation than are those who go into other fields of work. It is possible that the language and literature majors tended to remain within training fields as consistently as they did within occupations. The reason they do not show so high a ranking when measured by training fields is that several other fields of undergraduate study lead into a wider range of occupations, and therefore women who matriculated in some of these other majors may make a larger number of occupational shifts and still remain within one training field. For example, it is entirely possible that the women who majored in home economics changed occupations relatively frequently but training fields rarely because of the fact that a number of very desirable occupations may grow out of home economics training.

Just why the women who majored in natural science should have changed occupations and training fields rela-

tively frequently it is difficult to say. It may be due to the fact that employers have had a tendency, slowly decreasing, to prefer men for many positions for which science training equips an individual. This difficulty which women have had in securing and holding good science positions would naturally cause changes of occupations and in many cases shifts into occupations involving new training fields. The difficulty of finding satisfactory work explains in part why so large a proportion of the women who matriculated in music and art made frequent changes in occupations and all too often went into kinds of work in which they had little use for their highly specialized training. In this case the difficulty of finding work grows, not out of competition with men, but out of the problem facing both men and women of making a satisfactory living by music or art, especially for the person of only average ability.

The social sciences offer preparation for many different kinds of work. It is easy to see why those women who majored in this field should have had a low percentage engaging in one occupation and a high average number of occupations. It is not so easy to see why they did not have a high record of continuity within training fields. The explanation may possibly be that there is a certain amount of idealism connected with popular thinking about social service work just as there is in popular thinking about religious work. This idealism might lead young women to major in the social sciences without any intelligent vocational thinking, without a knowledge of what is involved in work in that field. If this is true, the realities of the occupations open to social science majors may lead to shifts into other occupations.

Whatever the reasons, it is true that the women who majored in home economics and in language and literature had a very good chance at a high degree of continuity of vocational experience. It is equally true that those who majored in the social sciences were very likely to make changes in their occupations and in the training fields involved and that those who majored in the natural sciences and in music and art were almost as likely to change their occupations and to leave the fields in which they were originally trained.

VIII

Vocational History

The divisions into groups with different vocational histories are made on two bases, groups differing in the time when vocational decisions were made and groups differing in pre-college experience in the work of the present occupation. *Vocational decision* refers to a definite choice of the vocation to be entered. It may or may not have been the final choice, but it was in most cases made on the assumption that it would be final. There are four groups according to the time of making the vocational decision: those who made a choice before entering college, referred to for brevity as *before college*; those who made a choice during the years while they were in college, referred to as *during college*; those who made a choice *after graduation*; and a fourth group made up of a combination of those who made a choice during college, after graduation, or at some time after entering college, the time not clearly noted, referred to as *after college entrance.* In most cases the numbers who definitely stated that they made their vocational choices after graduation are so small as to make satisfactory separate treatment impossible. The comparisons will largely be between those who made choices before entering college and those who made choices during college, with an occasional check by comparison with the combined group who made choices at some time after entering college. *Present occupation*, it will be recalled, means the occupation in which the individual was engaged at the time of the survey.

Gainful Employment

Because of the small number of women who matriculated during the first period, 1889-1892, the only possible comparison as to vocational history in this group is between those who made their choices before college and those who made them after college entrance. A much larger percentage of those who chose their vocations before college than of those who chose after college entrance had at some time been gainfully employed.

In the third and fourth matriculation period groups where finer divisions were possible those who made vocational decisions before college had a smaller percentage of women with a history of no gainful employment at any time than did those who chose their vocations during college. In the second matriculation period group the reverse relationship obtained. Throughout a larger proportion of those who chose their vocations after graduation than of those who chose at an earlier time had never been gainfully employed.

Although the differences in percentages are not statistically significant in any of the matriculation period groups, there is a slight indication because of the consistency in the direction of the differences that those who made vocational decisions before entering college were more likely to enter gainful employment than were those who made their choices during college. Those who failed to reach a decision until after leaving college were significantly less likely to enter gainful employment than were those who made a choice before leaving. But this must not be given too great weight since those who knew that because of marriage or for any other reason they would not enter gainful employment may not have given enough thought to vocational problems to have made definite decisions. It is possible too that those women who did not enter gainful employment did some rationalizing when they looked back to their college years and decided that they had never made a vocational choice, just as it is possible that those who did take up work of some kind decided, by a like process of rationalizing, that they had selected that particular occupation at some time previous to entering it. Such rationalizations were probably not so frequent, however, as to warrant giving them serious consideration.

Persistence in Occupation Originally Selected

Differences between the several vocational history groups in terms of their persistence in the occupations originally selected are very slight. Table 2 presents the data for the 1909-1912 and 1919-1922 matriculation groups combined. Among the women of the fourth period and of the third and fourth periods combined, those who made vocational choices

before college had a slightly lower percentage engaged in the occupations originally selected than did those who made their choices during college. Among the third matriculation period women, however, a significantly higher percentage of those who decided on their vocations before college than of those who made their decisions during college were employed, at the time they filled out the schedules, in the work originally chosen.

The evidence seems to lead to the conclusion that the women who chose their vocations before college showed greater persistence in the occupation originally entered than did the women who made such choices during college.

Vocational Stability

NUMBER OF YEARS TO A POSITION

Table 3 shows that the women of the third and fourth matriculation periods who reached vocational decisions before college remained on the average longer in a position than did those who made their decisions during college or after graduation. The average for those who decided on their vocations before college is significantly higher than the average for those who did not make a decision until after graduation. When the women of the four matriculation periods are combined, those who made their decisions before college had a slightly lower mean and median number of years to a position than did those who made their decisions after entering college. The same is true among the second period women also.

For the purposes of this part of the investigation the differences between groups within single matriculation periods are probably more significant than the differences between the same groups in the combined periods because the factor of time, which was shown in Chapter V to be associated with wide variations in average number of years to a position, is held relatively constant in the single matriculation period. Because of the number of matriculants in the third and fourth periods, the differences found there have more significance than do the differences which appear in the earlier groups. Furthermore, for practical purposes of vocational guidance,

the findings based on records of the women more recently in college have greater value than do those based on records of women of the earlier periods.

Although the data are not entirely consistent, there is strong indication that the women who made vocational choices before entering college were likely to have a higher average number of years to a position than did those who made their vocational decisions at some later time.

When the groups are compared on the basis of the percentages in each who remained on the average at least two years in a position the same relationships are found that obtain when the measure is the average number of years to a position for the whole period of gainful employment. Still these differences are so small that they might have been due to chance.

Further, it is possible that the two-year level is not high enough to show up differences that may actually exist, that is, that too large a proportion of all the groups reach this level for differences to appear. As a matter of fact, significant differences do appear on the higher average-level. A larger proportion of the women of the fourth period who chose their vocations before college than of those who chose either during college or at some time after college entrance stayed on the average three years or more in a position. In the second and third period groups those choosing before college had a significantly higher percentage who remained on the average five or more years to a position than did those who made a choice at some time after entering college. Attention is called to the fact that, whereas those of the second period who had chosen their vocations before college had a slightly lower percentage of their number at the two-year level than did those who chose at some time after entering college, at the five-year level the position of the two groups has been reversed and the difference between them has become statistically significant. These data on the percentages of women of the different groups who reached various levels of average number of years to a position strengthen the conclusions arrived at on the basis of mean and median number of years to a position. There seems to be little doubt that those who made their vocational choices before entering college tended to remain a higher average

number of years in a position than did those who made their choices either during college or after graduation.

Number and Nature of Changes in Occupation

When the measure of vocational stability is the number of occupations engaged in and the number of training fields involved therein, the women who had chosen their vocations by the time they entered college very definitely rank higher than do the women who made such choices at a later time, either during their college years or after graduation. (See Tables 4 and 5.)

The evidence from data on the number of occupations and of training fields entered clearly corroborates the evidence from data on the average number of years to a position, namely, that the women who made their occupational choices early, especially before entering college, showed greater vocational stability than did those who made their choices at some later time.

College Courses and Present Occupation

A larger percentage of the women who made an early choice of vocation than of those who made a choice after entering college had carried undergraduate majors which prepared them for the vocations they later entered.

Table 7 shows the figures on which this generalization is based. Fifty-seven and two tenths per cent of the third period women who made their choices before college, 47.0 per cent of those who made them during college, and 55.5 per cent of those who made them after graduation had received undergraduate training for their present occupations. For the fourth period women there was an even wider range of percentages, 73.5 per cent of those who chose their vocations before college, 55.1 per cent of those who chose during college, and 26.8 per cent of those who chose after graduation having majored in undergraduate courses which prepared them for the work they later did.

There is evidently a strong positive relationship between choice of a vocation before entering college and college preparation for the occupation later entered. This would suggest

that probably the women who had reached fairly definite vocational decisions before entering college chose their college courses for the vocational training they would receive from them. If this is what really happened, it was probably due to a persistent vocational interest which began before college days and continued through the years spent in college and into the period of wage earning.

Summary

A summary of the data on the relationship between vocational continuity and the time of vocational choice includes the following points indicating that those who made their decisions before college had a more continuous vocational history than did those who made their decisions later:

(1) The women who chose their vocations before entering college were possibly more likely to become earners.
(2) They had more persistence in the occupations originally selected.
(3) They remained on the average longer in a position and made fewer changes in occupations and in training fields.
(4) They more frequently prepared in college for the work which they later entered.

The evidence clearly indicates that a choice of vocation before entering college is more likely to mean entrance to a straight road of occupational life than is a choice during college or after graduation. Whether such a straight road is to be advocated or not will be discussed in the next chapter.

Pre-College Experience in the Work of the Present Occupation

The data for this part of the investigation were secured from answers to the question, "Did you have pre-college experience in the work of your present occupation?" Although the answers to this question were necessarily fairly free from subjectivity, there was undoubtedly some misinterpretation of the meaning of the question. For this reason, as well as because of the indefiniteness of the findings, this section is presented very briefly.

The number of women who had had pre-college experience in the work of the present occupation is so small that the probability of finding significant differences by the statistical technique used in this investigation seemed very slight. Furthermore, final conclusions as to the value of pre-college experience would require data much more varied than that made available by the land-grant college survey schedules. In view of these facts it did not seem worth while to apply all the criteria which were used for other parts of the investigation and only one measure was applied in the attempt to determine the difference in vocational continuity between those women who had had pre-college experience in their present occupations and those who had not had such experience. This measure — continuity in occupations and in training fields — probably has greater validity than the others for this particular part of the study.

The data can be presented briefly without the aid of a table. The women of the fourth period who had not had pre-college experience in the work of the present occupation were a little more likely to remain in one occupation and one training field than were those who had had such experience. Among the third period women the relationship is reversed, those with pre-college experience having a slightly higher percentage who remained in one occupation and in occupations involving one training field than did those without pre-college experience.

The only conclusion that can be drawn from these data is that there seems to be no difference in vocational continuity between those who did and those who did not have pre-college experience in the work of the present occupation. A careful investigation of the effect of pre-college experience in work of some kind on later vocational experience would undoubtedly be of value for vocational guidance work. It would be interesting, too, to compare the value of pre-college vocational experience with the value of during-college vocational experience such as is being made possible for the students of Antioch College. Until several such investigations have been made the only conclusion that can be reached is the negative one stated just above.

IX

Does Vocational Continuity Pay?

Should vocational continuity be planned for and encouraged? Would the ideal vocational guidance program in high schools and colleges result in early choice of the major, a completion of the course and taking of a degree in the chosen major, entrance into employment for which the major gave more or less direct preparation, continuance in the occupation originally entered and a high average number of years to a position?

Data upon which to base an answer to this question are available in fragmentary form only. The problem of personal satisfaction, of fullness of living derived from the job and from vocational continuity or from occupational changes is one on which little is known. Objective criteria, especially that of earnings, are the only ones readily available.

Recognizing the limitations of this criterion it is still worth while to ask what of the earnings of the women in relation to the number of occupations and of training fields which they have entered? Does there seem to be any relationship between vocational stability and size of earnings?

A partial answer may be obtained from the data given in Tables 11 and 12. Of the women whose records were analyzed in Tables 4 and 5 there were 2862 who gave present earnings as well as number of occupations engaged in and 2825 who gave present earnings and number of training fields entered.

Present earnings were asked for in the schedules according to the earning classes as given in Tables 11 and 12. In comparing earnings of those who had been in various numbers of occupations or training fields comparisons must be made within the same matriculation period in order to care for the length of experience factor. Also, in order to get somewhat more uniformity, the women have been classified as married or single and as in teaching or non-teaching types of work.

Reference to Table 11 will show that in non-teaching present occupations those who had been in three or in four occupations showed the largest proportion of married and of

TABLE 11.—EARNINGS OF 438 MARRIED AND 2424 SINGLE WOMEN OF THE 1909-1912 AND 1919-1922 MATRICULATION GROUPS DISTRIBUTED BY NUMBER OF OCCUPATIONS AND TYPE OF WORK

Type of work and earnings classes	Percentage of women having number of occupations													
	One occupation				Two occupations				Three occupations				Four occupations[1]	
	1909-1912		1919-1922		1909-1912		1919-1922		1909-1912		1919-1922		1909-1912	1919-1922
	Married	Single	Married	Single	Married	Single	Married	Single	Married	Single	Married	Single	Single	Single
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Non-teaching occupations														
Less than $500	..	..	1.1	1.4	..	..	3.8	.8	16.7	..	..	2.6	..	..
$500-999	..	2.6	7.4	8.7	..	2.5	1.9	9.1	..	..	9.1	12.8	..	66.7
$1000-1999	50.0	44.7	68.1	67.7	31.2	39.5	71.7	65.2	..	29.2	63.6	56.4	20.0	..
$2000-2999	50.0	31.6	16.0	18.7	56.2	38.3	15.1	23.7	50.0	45.8	27.3	28.2	30.0	33.3
$3000-4999	..	21.0	7.4	3.0	6.2	16.0	5.7	1.2	33.3	20.8	..	..	50.0	..
$5000 and over	..	..	..	.2	6.2	3.7	1.9	..	..	4.2	..	..	..	..
Number women reporting	4	38	94	493	16	81	53	253	6	24	11	39	10	3
Teaching occupations														
Less than $500	..	3.2	1.0	.3	14.3	..	..	1.8	..	..	..	..	..	
$500-999	..	30.4	7.0	1.7	71.4	2.4	15.9	5.4	..	..	..	33.3	..	..
$1000-1999	57.7	57.0	80.5	85.0	14.3	31.7	57.9	74.0	100.0	33.3	..	50.0	..	..
$2000-2999	23.1	9.5	11.0	12.7	..	51.2	26.3	18.7	..	33.3	..	16.7	100.0	..
$3000-4999	19.2	..	.5	.3	..	14.6	..	..	..	33.3	..	..	..	..
$5000 and over	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Number women reporting	26	158	200	1162	7	41	19	112	2	3	..	6	1	..
All occupations														
Less than $500	..	..	1.0	.7	26.1	..	2.8	1.1	12.5	..	..	2.2	..	..
$500-999	..	3.1	7.1	3.8	60.9	2.5	5.6	7.9	..	..	9.1	15.5	..	66.7
$1000-1999	56.7	33.2	76.5	79.9	8.7	36.9	68.0	67.9	25.0	29.6	63.6	55.5	27.3	..
$2000-2999	26.7	52.0	12.6	14.5	4.3	42.6	18.1	22.2	37.5	44.4	27.3	26.7	27.3	33.3
$3000-4999	16.7	11.7	2.7	1.1	..	15.6	4.2	.8	25.0	22.2	..	..	45.5	..
$5000 and over	..	..	..	.1	..	2.5	1.4	..	..	3.7	..	..	..	..
Number women reporting	30	196	294	1655	23	122	72	365	8	27	11	45	11	3

[1]No married women reported in this class

single women earning $2000 or over. Likewise, except for the single women of the 1909-1912 group, a larger proportion of those who had been in three or four occupations rather than in one or two reported present earnings under $1000 a year.

In teaching, except for the single women of the 1909-1912 group, there was the same tendency, though not quite so clearly marked, for a larger proportion of those who had been in two or more occupations than of those with only one to be in the under $1000, and, except for the married women of the 1909-1912 group, in the $2000 and over earning classes. Taking all occupations together, the married and single women in both matriculation periods, 1909-1912 and 1919-1922, showed those who had tried three or four occupations with a larger proportion of their numbers reporting earnings of $2000 or over than of those with fewer occupations. Also, except for the single women of the 1909-1912 group, those with three or four occupations had a larger percentage earning less than $1000 than was true of those remaining in one or two occupations.

Thus quite definitely, especially in the non-teaching fields, those who had moved from their original occupations even making as many as three changes were more likely to have a larger proportion of their group earning $2000 a year or more than were those who had remained in their original occupation. And, at the other earning extreme, except for the single women in the 1909-1912 group, a larger proportion of those who had changed than of those who had remained in their original occupations reported earnings of under $1000.

The relation between earnings and number of training fields shows somewhat the same tendency, as may be seen from the figures in Table 12. Among the groups of women reporting earnings a larger proportion of those who had changed training fields at least once than of those still in the original field were in the $2000 or more class. With minor exceptions, this was also true for both the non-teaching and the teaching groups, the non-teaching showing a tendency to make more changes than did the teaching group.

Again, except for the married women of the 1919-1922 group, relatively more of those reporting two or more training fields than of those with only one were earning under

TABLE 12. EARNINGS OF 12,[illegible] MARRIED AND 2,950 SINGLE WOMEN OF THE [illegible] DISTRIBUTED BY NUMBER OF TRAINING FIELDS AND TYPE OF WORK

Type of work and earnings classes	Percentage of women having number of training fields													
	One field				Two fields				Three fields				Four fields[1]	
	1909-1912		1919-1922		1909-1912		1919-1922		1909-1912		1919-1922		1909-1912	1919-1922
	Married	Single	Married	Single	Married	Single	Married	Single	Married	Single	Married	Single	Single	Single
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Non-teaching occupations														
Less than $500	..	..	1.9	1.4	10.0	..	2.5	.6	..	..	..	4.2	..	..
$500-999	..	1.7	7.6	8.2	..	2.5	2.5	10.3	..	..	..	20.8	..	100.0
$1000-1999	40.0	36.2	65.7	65.1	30.0	43.7	70.0	74.8	..	75.0	83.3	45.8	..	..
$2000-2999	60.0	34.5	17.1	22.3	50.0	36.2	17.5	13.5	66.7	12.5	16.6	29.2	33.3	..
$3000-4999	..	27.6	7.6	2.9	..	13.7	5.0	.6	33.3	12.5	..	..	66.7	..
$5000 and over	..	..	..	.2	10.0	3.7	2.5	..	..	..	..	..	..	..
Number women reporting	10	58	105	588	10	80	40	155	3	8	6	24	3	2
Teaching occupations														
Less than $500	..	..	1.0	.3	..	..	..	3.2	..	..	..	66.7	..	..
$500-999	..	2.7	7.2	1.7	20.0	6.2	18.2	11.1	..	..	..	33.3	..	..
$1000-1999	60.7	30.6	78.8	84.1	60.0	37.5	72.7	73.0	100.0	..	..	..	..	..
$2000-2999	21.4	55.7	12.5	13.6	20.0	56.2	9.1	12.7	..	50.0	..	..	..	..
$3000-4999	17.9	10.9	.5	.2	..	..	..	..	..	50.0	..	..	..	..
$5000 and over	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Number women reporting	28	183	208	1213	5	16	11	63	1	2	..	3	..	..
Total														
Less than $500	..	..	1.3	.7	6.7	..	2.0	1.4	..	..	..	11.1	..	..
$500-999	..	2.5	7.3	3.8	6.7	3.1	5.9	10.5	..	..	..	22.2	..	100.0
$1000-1999	55.3	31.9	74.4	77.9	40.0	42.7	70.6	74.3	25.0	60.0	83.3	40.7	..	..
$2000-2999	31.6	50.6	14.1	16.4	40.0	39.6	15.7	13.3	50.0	20.0	16.7	25.9	33.3	..
$3000-4999	13.2	14.9	2.9	1.1	..	11.5	3.9	.5	25.0	20.0	..	..	66.7	..
$5000 and over	..	..	..	.1	6.7	3.1	2.0	..	..	..	..	..	..	..
Number women reporting	38	241	313	1801	15	96	51	218	4	10	6	27	3	2

[1]No married women reported in this class

$1000. This was the case also for those teaching and among the non-teaching group except for the married women of the 1919-1922 period.

With the exceptions noted the trends for the married and for the single women were in the same direction.

In brief, as far as earnings are a criterion, it would appear that there were two types of women who were likely to make changes in occupations and in training fields — those who changed to better themselves, who because of imagination, initiative and ability could see possibilities, change occupations and take new training in order to benefit by those possibilities — and, at the other end, those who changed and did no better afterwards than they did before.

Thus, there seems to be no general answer to the question "Does vocational continuity pay?" For those with ability to make the right changes change is profitable, for those lacking that ability it is not.

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APPENDIX A

The schedule printed below is the one from which the data were obtained for the studies in this Bulletin.

United States Department of the Interior
BUREAU OF EDUCATION

LAND-GRANT COLLEGE SURVEY

QUESTIONNAIRE I

TO FORMER STUDENTS OF THE LAND-GRANT COLLEGES

DIRECTIONS

The first eight questions are to be answered at the college before the questionnaire is sent out.

The former student should begin with question 9.

Answer questions consecutively.

If a question does not apply to you, omit it.

[*To be filled by the college*]

1. Name of Land-grant College

2. Name of former student

3. State or country (if other than United States) from which the former student registered in college

4. Check year of matriculation:

1889-90	1899-00	1909-10	1919-20
1890-91	1900-01	1910-11	1920-21
1891-92	1901-02	1911-12	1921-22

5. Did the former student graduate from the major division of your institution in which he first registered?

Yes No

6. If "Yes," what degree was received?

7. If "No," check the number of years the student was enrolled in the major division of first registration.

One year or less More than two years
Over one year to two years

8. Check the major division in which the former student first registered:

Arts and Sciences
Agriculture
Engineering
Home Economics
Vocational and Industrial Education
Education
Pharmacy
Chemistry
Commerce and Business
Forestry
Music and Fine Arts
Architecture
Journalism
Veterinary Medicine
Textiles
Industrial Science

[*To be filled by the former student*]

9. The major division of the institution in which you registered as a freshman is indicated in item 8. What was your major field of study or specialization in that division (e.g., economics, civil engineering, sanitary chemistry, general agriculture, animal husbandry, salesmanship, English, history, teacher training in home economics, accounting, etc.)?

10. In what State or country (if other than the United States) do you now reside?

11. What was your age (to nearest birthday) when you entered college?

12. How many years since you left college? Count from the time you graduated with bachelor's degree or left without graduating.

13. Indicate sex: (Check) Male ; female

14. Marital status: (Check) Single ; married ; widow or widower ; divorced

15. Number of living children

16. Number of children at present attending—
Elementary school
High school or preparatory school
College or university

17. Number of living children who have finished or left school:

If *none*, check on this line
Before completing elementary school
After completing elementary school
After starting in high school but before finishing
After graduating from high school
After entering college but before finishing
After graduating from college
After pursuing graduate study

18. Were your father and mother born in the United States or a foreign country?

Born in United States: (Check) Mother ; father
Foreign born: (Check) Mother ; father

19. Were you reared on a farm? (Check) Yes ; No

20. If you were not reared on a farm—

a. Did you have any farm experience (actual living and working on a farm) before entrance to college? (Check)
Yes No

b. Check the size of the community in which you were brought up:

Less than 2,500 people
From 2,500 to 10,000 people
From 10,000 to 50,000 people
Over 50,000 people

21. What educational training have you had beyond your undergraduate work in the major division of your first registration? (If you transferred from the major division in which you first registered, include all training since that transfer.) Check "None" or the appropriate line below:

None
Undergraduate college work:

Years of work	In the institution which sent you this questionnaire	In some other institution than the one which sent you this questionnaire
One year or less		
Over one year to two years		
Over two years to three years		
Over three years		
Degree received, if any		

Graduate work:

One year or less

Over one year to two years

Over two years to three years

Over three years

List advanced degrees received from graduate work

Have you had any extension or correspondence courses from colleges or universities? (Check) Yes ; No

Have you had any other educational training? (Check) Yes ; No

22. For what per cent of your undergraduate college expenses (include travel, tuition, fees, board, room, clothing, books, and all incidental college expenses) were you self-supporting?

None
1 to 25 per cent
26 to 50 per cent
51 to 75 per cent
76 to 100 per cent

23. If you were self-supporting to a certain extent for your college expenses, check the ways in which you secured that support?

By work, before entrance to college
By work, during the college year
By work, during summer vacations
Dropped out of college for a semester or more to earn money and then returned
Borrowed money which has been repaid or will be repaid

24. Did you hold an undergraduate scholarship or fellowship? (Check) Yes ; No

25. While you were an undergraduate were you a member of a college social fraternity? (Check) Yes ; No

26. Indicate the undergraduate student activities in which you participated: (Check)

College publications
College dramatics
College or class organization or government
Athletics
Debating or public speaking
Active membership in undergraduate professional or subject-matter clubs or societies
Active membership in undergraduate social clubs or societies, other than fraternities
Cadet officer in military department
Other
None

27. When you entered college did you have some specific field of work in mind for which you expected to prepare yourself? (Check) Yes ; No

28. If "Yes," check on the following list the *chief* reason for your preference for that field of work at that time. (Check only one reason.)

a. Special interest in it
b. Special ability for it
c. Family connection with it
d. Urge or influence of family or others
e. Economic possibilities without reference to any of the above
f. Other

29. If "No" to item 27, did you decide on some specific field of work—

a. By the beginning of your junior year? (Check) Yes ; No
b. Before you graduated? (Check) Yes ; No

30. At the time you made your decision, had you had experience in that field of work? (Check) Yes ; No

31. Are you now following that specific occupation? (Check) Yes ; No

32. If "No," are you in a closely allied field? (Check) Yes ; No

33. Check the main reason or basis on which you chose your first occupation after leaving college (Check only one reason.)

a. Special interest in it
b. Special ability for it
c. Family connection with it
d. Urge or influence of family or others
e. Present economic advantage without reference to *a*, *b*, *c*, or *d*
f. Future economic possibility without reference to *a*, *b*, *c*, or *d*
g. Geographic location
h. Only position available
i. Other

34. Did you have any pre-college experience in the work of your present occupation? (Check) Yes ; No

35. What is your present occupation? (If you have more than one occupation, list the one which you consider occupies the greater part of your time or attention. Indicate the major emphasis of the work, e.g., elec-

trical engineer, high-school teacher of English, fruit farmer, retail clothing merchant, automobile manufacturer, veterinary, bacteriologist, professor of physical chemistry.)

36. What is your position in that occupation (if not already stated in 35), e.g., foreman, district manager, owner, clerk, operator, etc.?

37. CLASSIFICATION OF OCCUPATION

We have made the following eight major divisions of occupations according to broad subject-matter fields. Check the division which you think corresponds to the field of major emphasis of your present occupation. If your field is primarily teaching, supervision, or the administration of teaching, as differentiated from research and extension and in one of the subject-matter fields listed, classify your occupation under that subject-matter division and also under the division of *Education*.

Agriculture (page 5).
Home Economics (page 6).
Engineering (page 6).
Forestry (page 6).
Veterinary Medicine (page 6).
Education (page 7). (To be checked by everyone in the fields of teaching, supervision, and administration of teaching. If teaching is in one of the subject-matter divisions listed here, check *Education* and that division also in this table. Also classify your occupation under both corresponding occupational classifications on the succeeding pages.)
Commerce and Business (page 7).
Other (page 7), in case you do not think your occupation comes under one of the above classifications.

On the page indicated after the division you have just checked you will find an occupational classification for that division. Check on that page the class which you think most nearly fits the occupation in which you are engaged.

AGRICULTURE.

1. Farming

Include farm or ranch operator (either as owner or renter), farm or ranch superintendent, manager, foreman, or laborer.

2. Business or professional work in commercial fields connected with Agriculture

Include work in any capacity connected with buying, selling, manufacturing, or distributing agricultural products or supplies, such as grain, livestock and its products, fruit, cotton, farm machinery, fertilizer, seeds, and other agricultural commodities, agricultural journalist or advertiser, florist, nurseryman, strictly agricultural financing and other business in the field of agriculture; and chemist, bacteriologist, entomologist, plant pathologist, and other similar professional work connected with agriculture. Do not include positions with any branch of the Federal, State, or local government.

3. Teaching, research, extension, inspection, and regulatory positions in the field of Agriculture

Include agricultural positions in schools, colleges, Government departments, experiment stations, or any similar public supported institution or organization. Teachers of any branch of agriculture or agricultural science, specialists in departments of agriculture, county agricultural agents, Government inspectors of agricultural products or supplies, and any other agricultural occupation in the Government service, either Federal, State, or local should come under this classification.

HOME ECONOMICS.

1. Homemakers

2. Business or professional work in commercial fields connected with Home Economics

Include dietitians, cafeteria or tea-room managers, dining and residential hall managers, experimental or demonstrational work for commercial concerns, bacteriologists, costume designers, milliners, dressmakers, etc.

3. Teaching, research, extension, inspection, and regulatory positions in the field of Home Economics

Include teachers, research and extension workers, and administration and secretarial positions in the field of Home Economics in schools, colleges, and Government bureaus or agencies. Home demonstration agents, junior project workers, social welfare workers, inspectors, and many others in Home Economics work connected with public welfare should come under this classification.

ENGINEERING.

Indicate the major field of engineering in which your occupation lies (e.g., civil, electrical, mechanical, mining, chemical, or any other):

Check in the following classification the class of engineering work which most nearly describes the nature of your occupation:

1. Professional Engineering

Include such occupations as civil engineer, architectural engineer, construction engineer, hydraulic engineer, mining engineer, research engineer, etc.

2. Work closely allied to Engineering

Include surveyors, foremen, superintendents, operators, and others connected with businesses or professions in which engineering ability is used, but which would not usually be considered of a professional nature.

3. Teaching, research, extension, inspection, and regulatory positions in the field of Engineering

Include all engineering positions in schools, colleges, and Government departments, including Government inspectors in the field of engineering. Research occupations for commercial concerns should be classified under 1 or 2 above according to their nature.

FORESTRY.

1. Professional Forester

   Include forester or forest ranger for any branch of the Government and technical foresters with commercial concerns, such as logging and timber, railroad, telephone, or pulp and paper companies.

2. Business or professional work in commercial fields connected with Forestry

   Include such occupations as lumber manufacturing or merchandising, logging engineer, and other occupations closely allied to forestry.

3. Teaching, research, extension, inspection, and regulatory positions in the field of Forestry

   Include such positions in schools, colleges, and Government departments, experiment stations, or any similar institution.

VETERINARY MEDICINE.

1. Practicing Veterinarian

2. Business or professional work in commercial fields connected with Veterinary Medicine

   Include such occupations as bacteriologist, pathologist, or other specialists.

3. Teaching, research, extension, inspection, and regulatory positions in the field of Veterinary Medicine

   Include such positions in schools, colleges, Government departments (either Federal, State, or local), experiment stations, or any other similar public supported institution.

EDUCATION.

1. Teaching in—
   - Elementary school
   - Junior or senior high school
     - Vocational agriculture
     - Home economics
     - Industry and trades
     - All other
   - Normal school
   - College or university

2. School administration, as—
   - Superintendent
   - Principal
   - Other

3. Supervision
4. College administration

COMMERCE AND BUSINESS.

1. Manufacturing
2. Transportation and communication
3. Banking and finance
4. Insurance and real estate
5. Commission and brokerage

6. Public service
7. Wholesale merchandising or salesmanship
8. Retail merchandising or salesmanship
9. Construction
10. Other

OTHER.

1. Professional work

   Include such occupations as lawyer, physician, minister, dentist, and others which are usually thought of as strictly professional, and which would not be classified under professional work in one of the first seven major classifications.

2. Nonprofessional work

   Include all occupations that would not come under any previous classification.

38. Do you consider your present occupation as (check)—
    Permanent? Temporary? Of doubtful duration?

39. Are you an owner or part owner of a business which constitutes a major part of your occupation? (Check) Yes ; No . If "Yes," check your approximate capital investment in that business:

Less than $2,500	$20,000 to $49,999
$2,500 to $4,999	$50,000 to $99,999
$5,000 to $9,999	$100,000 or more
$10,000 to $19,999	

How was the major portion of this capital secured? (Check) Earned ; borrowed ; inherited ; other

40. Check your approximate, annual earned income from your occupation for the 1st, 2nd, 5th, 10th, 15th, 20th, 25th, and 30th years after you graduated or left college:

Years since leaving								Income from occupation
1	2	5	10	15	20	25	30	
								Less than $500.
								$500 to $999.
								$1,000 to $1,999.
								$2,000 to $2,999.
								$3,000 to $4,999.
								$5,000 to $7,499.
								$7,500 to $9,999.
								$10,000 to $19,999.
								$20,000 or more.

41. List in consecutive order your positions since you left college. Include any years spent in graduate work.

Occupation or position	Number years in each	Salary or earned income for first year in each new position

42. In which of the following activities outside of business do you participate?

Professional, educational, or business clubs or organizations
Social or fraternal clubs or organizations
Political clubs or organizations
Athletics
Other

43. If you are a nongraduate of the college from which you received this questionnaire, check the main reason why you left the college without completing the requirements for a degree:

a. Health, including your own or that of some member of your family
b. Scholastic difficulty
c. Financial reasons, either personal or family
d Change of mind with reference to the occupation or field of study toward which you had been directing your effort
e. Other

APPENDIX B

THE LAND-GRANT COLLEGES

The 6665 women who co-operated in the Land-Grant College Survey were matriculants in the following 42 institutions:

Alabama Polytechnic Institute
University of Arkansas
University of California
Colorado Agricultural College
Connecticut Agricultural College
University of Delaware
University of Florida
Georgia State College of Agriculture
University of Hawaii
University of Idaho
Purdue University
Iowa State College
Kansas State Agricultural College
University of Kentucky
University of Maine
University of Maryland
Massachusetts Agricultural College
Massachusetts Institute of Technology
Michigan State College
University of Minnesota
University of Missouri
Montana State College
University of Nebraska
University of Nevada
University of New Hampshire
Rutgers University
New Mexico College of Agriculture and Mechanic Arts
Cornell University
North Dakota Agricultural College
Ohio State University
Oklahoma Agricultural and Mechanical College
Oregon Agricultural College
Pennsylvania State College
Rhode Island State College

South Dakota State College
University of Tennessee
Agricultural College of Utah
University of Vermont
Virginia Agricultural and Mechanical College
State College of Washington
University of Wisconsin
University of Wyoming